DOCUMENT RESUME

ED 068 850 CG 007 340

TITLE	Planning for Creative Change in Mental Health Services: A Distillation of Principles on Research Utilization...Volumes 1 and 2.
INSTITUTION	National Inst. of Mental Health (DHEW), Bethesda, Md.
PUB DATE	72
NOTE	555p.
EDRS PRICE	MF-$0.65 HC-$19.74
DESCRIPTORS	*Annotated Bibliographies; Bibliographies; Change Agents; *Community Services; Human Services; Information Networks; *Information Sources; Innovation; *Mental Health; *Mental Health Programs; Operations Research; Research

ABSTRACT

This is a series of publications on mental health services research and development. The purpose of the series is to offer assistance to persons working toward continually increased effectiveness of delivering mental health contributions to people in need. Reflected in all publications in the series is a three-phase process of services improvement through planning for creative change. "Information Sources and How to Use Them" consists of two parts: (1) search services and (2) indexes to the periodical literature. "A Distillation of Principles on Research Utilization" (Volume I) consists of four major sections: (1) the problem of research utilization, (2) some factors which condition innovation, (3) ways of improving the linkage, and (4) facilitating organizational change. The second volume, "Bibliography with Annotations" may be used as an aid in supplementing the material contained in Volume I. The bibliography is intended to foster continued investigations in refined techniques of change through knowledge utilization. (Author/BW)

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Planning for Creative Change in Mental Health Services:

INFORMATION SOURCES AND HOW TO USE THEM

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CG 007 340

NATIONAL INSTITUTE OF MENTAL HEALTH

Planning for Creative Change in Mental Health Services: INFORMATION SOURCES AND HOW TO USE THEM

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HOW TO USE IT

Any user who anticipates frequent utilization of NTIS services should have access to the publications listed above. All reports should be ordered by accession number. If the number is not known, furnish the complete title exactly as published. Include any other identifying information, such as the contract number, sponsoring Federal agency, author of report; or cite the source of information.

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COMMENT

Although the collection is oriented toward the technical and scientific community and toward industry, it also includes titles in the behavioral/sciences and the biological/medical sciences, and accordingly is a resource for reports related to mental health.

ERRATA

Please add the following text to page 3, column 1:

AMERICAN PSYCHOLOGICAL ASSOCIATION, Psychological Abstracts Information Services,
1200 Seventeenth Street, N.W., Washington, D.C. 20036. Phone: 202/833-[illegible]528.

WHAT IT PROVIDES

Through machine-readable tapes, the association provides computer access to the world's literature in psychology and related disciplines, as published in Psychological Abstracts (PA) over the past 5 years. This material includes classification codes designating major areas within psychology, controlled index terms, "free" index phrases, bibliographic information, and full abstracts. The tapes contain about 100,000 records, with about 24,000 records being added each year.

Tapes are available to information centers through PATELL (PA Tape Edition Lease or Licensing), while organizations may access the data base through a service called PADAT (PA Direct Access Terminal) and individuals may submit written search requests to PASAR (PA Search and Retrieval). Both PADAT and PASAR enable searching with natural language as well as index codes, and any or all portions of the records, including full abstracts, may be retrieved.

HOW TO USE IT

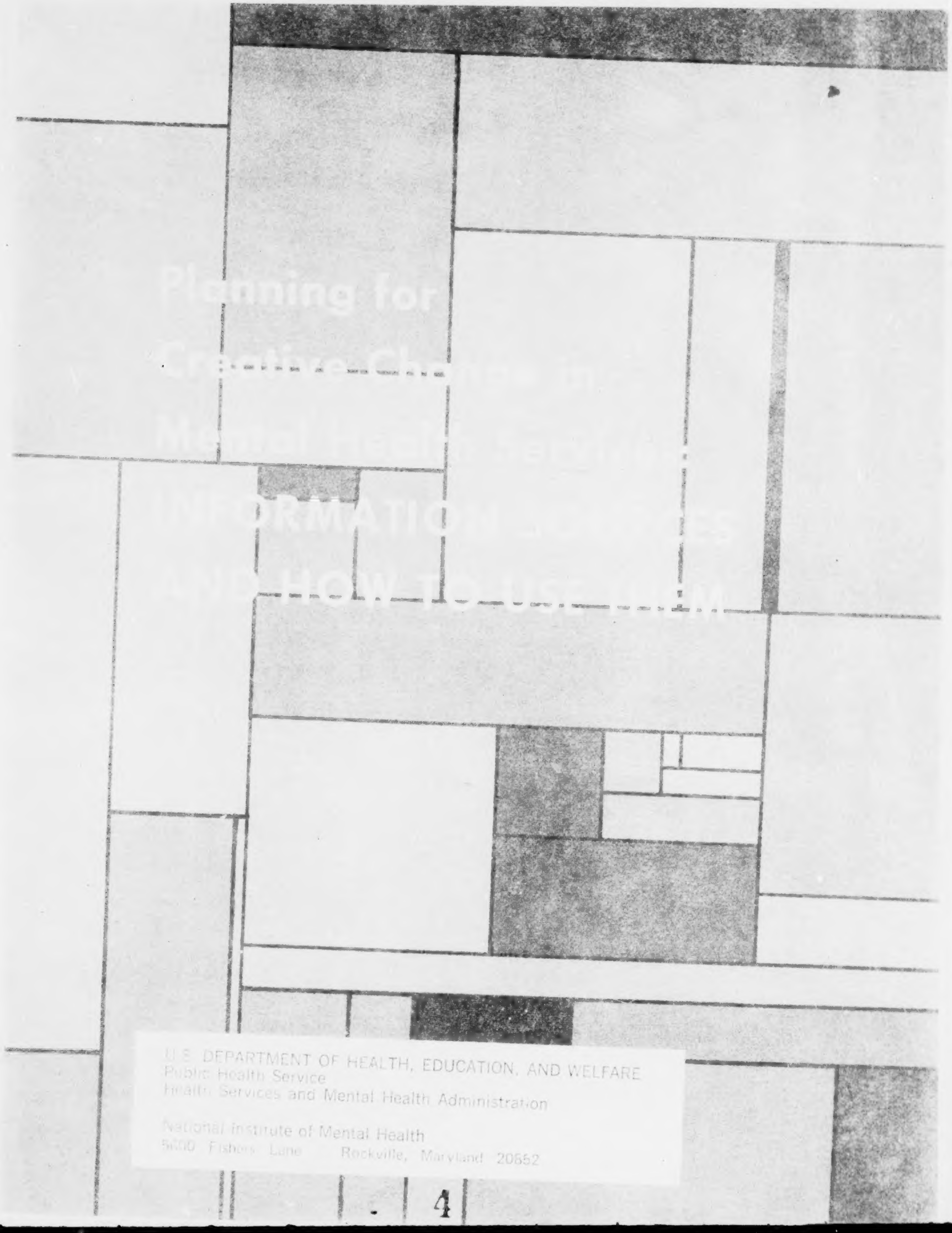
PASAR is accessible by mail. The individual fills out a search request form, making a specific statement of his information requirement, and sends it to the association's central office, where a search analyst processes the request on-line in an interactive mode with the data base. Request forms may be obtained from the central office or from a recent issue of PA. The product of the search is a computer print-out of bibliographic citations with full texts of abstracts, which is sent to the requester. Average costs of a PASAR search are between $40 and $60, based on a $15 processing fee plus $2.25 per minute computer time, with a maximum charge of $95 for a specific search.

Through PADAT, the researcher conducts his own search on a computer terminal located at his own facility. This method allows him to browse personally through the records, modifying his search as he obtains information from the data base. Output may be printed on-line if a "hard-copy" type terminal (such as a teletype) is used; otherwise, output may be printed off-line at the computer facility and mailed to the researcher. For the institution with a computer terminal, a PADAT subscription fee of $25 per month allows computer use at the rate of $1 per minute, so that costs of an average search are reduced. A minimum of 1 hour's use per month is required. Acceptable terminals may be leased for $85 per month.

Through PATELL, an annual lease allows use of the PA tapes by an institution's personnel, while a licensing agreement permits the institution to offer services to others. The tapes are distributed quarterly. The price for leasing the 1971 tapes is $3,000, with the previous year's tapes being $2,000 and other previous years' tapes being $800 each. One must lease the current tape edition to retain use of previously leased tapes.

COMMENT

These services can provide rapid retrieval of worldwide behavioral and social science citations and abstracts with a high degree of relevancy to the user's specific need.



Planning for Creative Change in Mental Health Services:

INFORMATION SOURCES AND HOW TO USE THEM

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Services and Mental Health Administration

National Institute of Mental Health
5600 Fishers Lane Rockville, Maryland 20852

Publication No. (HSM) 71-9058
Printed 1971

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 35 cents

STOCK NUMBER 1724–0151

TABLE OF CONTENTS

PREFACE Page
INTRODUCTION v
SEARCH SERVICES 1
- Center of Alcohol Studies 3
- Defense Documentation Center (DDC) 3
- Direct Access to Reference Information: A Xerox Service (DATRIX) 4
- Educational Resources Information Center (ERIC) 4
- Institute for Scientific Information (ISI) 6
- Medical Literature Analysis and Retrieval System (MEDLARS) 7
- Mental Health Materials Center 9
- National Center for Voluntary Action Clearinghouse (NCVA) 9
- National Clearinghouse for Drug Abuse Information 9
- National Clearinghouse for Mental Health Information 11
- National Referral Center for Science and Technology 12
- Science Information Exchange (SIE) 12
- Science Information Office, Veterans Administration 13
- Technical Information Service 13
- Consulting Resources 14

INDEXES TO THE PERIODICAL LITERATURE Page
- *Bibliography of Medical Reviews* 17
- *Child Development Abstracts and Bibliography* 17
- *Coordinate Index Reference Guide to Community Health by Stuart E. Golann* 17
- *Crime and Delinquency Abstracts* 17
- *Cumulative Index to Nursing Literature* 17
- *Excerpta Medica* 17
- *Hospital Literature Index* 17
- *Index Medicus* 18
- *International Nursing Index* 18
- *Mental Retardation Abstracts* 18
- *Poverty and Human Resources Abstracts* 18
- *Psychological Abstracts* 18
- *Psychopharmacology Abstracts* 19
- *Quarterly Journal of Studies on Alcohol; Section B, Documentation* 19
- *Readers' Guide to Periodical Literature* 19
- *Rehabilitation Literature* 19
- *Research Grants Index* 19
- *Science Citation Index* 19
- *Social Science and Humanities Index* 20
- *Sociological Abstracts* 20

REVIEWS FOR KEEPING CURRENT

Page
Alcoholism Treatment Digest 21
American Journal of Orthopsychiatry 21
American Journal of Psychiatry 21
APA Monitor 21
Behavioral Science 21
Community Mental Health Journal 21
Digest of Neurology and Psychiatry 21
Hospital and Community Psychiatry 21
Journal of Psychiatric Nursing and Mental Health Services 21
Mental Health Digest 21
Mental Hygiene 22
Psychiatry Digest 22
Psychiatric News 22
Psychiatric Progress 22
Roche Report: Frontiers of Hospital Psychiatry 22
Schizophrenia Bulletin 22

7

PREFACE

Information Sources and How to Use Them is one of a series of Institute publications on mental health services research and development. The purpose of the series is to offer assistance to persons working toward continually increased effectiveness of delivering mental health contributions to people in need.

Reflected in all publications in the series is a three-phase process of services improvement through planning for creative change:

(1) Identification of problems and needs for change in services.

Use of Program Evaluation is one publication aimed toward the improvement of formal approaches in front line facilities to help determine when change is—or is not—needed.

(2) Search and research to provide direction for effective change to solve problems and meet needs.

The publication, *Innovations and Current Conclusions*, issued several times each year, is to highlight innovative techniques. This publication, *Information Sources and How to Use Them*, is offered as an aid to mental health workers seeking new knowledge through all relevant literature. A section of the *Manual on Research Utilization* has been addressed to those planning original research on innovative mental health services delivery techniques.

(3) Promotion of the diffusion and adoption of innovations through planned change.

Out of recognition that the dissemination of knowledge alone ushers little change, sections of the *Manual on Research Utilization* have been devoted to techniques of planned change, addressed to consultants and administrators/practitioners. For persons wishing to become more thoroughly familiar with the utilization of knowledge in planned change, *A Distillation of Principles on Research Utilization* is offered. With the hope that it will foster continued investigations in refined techniques of change through knowledge utilization, *An Annotated Bibliography on Research Utilization* has been issued as a part of this series.

Grateful acknowledgment is extended to Dr. Edward M. Glaser and his staff at the Human Interaction Research Institute for compiling the comprehensive inventory of information sources. The material was prepared as part of the activities of Contract No. 42-69-1, National Institute of Mental Health. However, it had not been a required product of the contract. Dr. Glaser and his staff conceived the idea and carried it out for the benefit of the field. All data on the information sources were provided by the source organizations themselves. Sincere appreciation is due them, not only for their cooperation in providing the data according to a standard pattern, but for subsequent checking and editing the final copy relevant to their services. Mrs. Carrie Lee Rothgeb of the NIMH Office of Communications offered much valuable help in last-minute updating of changes in source data and in

reviewing the entire manuscript. The Project Officer for the contract was Mrs. Irma S. Lann, who heads the NIMH Research Implementation Section. Without her original conception of the basic project for which the contract was awarded, her continual encouragement of the plan for a manual on sources of information, and her editing and management of the manuscript for publication, this document would not have become available.

HOWARD R. DAVIS, PH.D.

Chief, Mental Health
Services Development
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Programs

INTRODUCTION

Printed sources of information have not, up until now, held the place they might in the improvement of mental health services. Roberts and Larsen, studying instances of innovation, concluded that written material stimulates less innovation than does informal contact.[1] More change is given direction on the basis of experience than by use of research findings. In only 8.7 percent of the instances were printed materials the stimulus for innovations. Computerized retrieval systems were rarely used in designing innovations. Glaser and Ross started their investigation at the other end; specifically, they surveyed the impact of two publications in prestigious professional journals which reported research on a weekend hospital model.[2] Only 5 percent of the potential user audience had familiarity with the model, and not all of those through reading the journals.

One of the problems with using printed material as a basis for change—the major problem according to Roberts and Larsen—is the combined one of the multiplicity of sources and the time required to cover them. This reference manual has been compiled to allow the reader to quickly identify and use those sources most relevant to his specific needs.

Faster, more systematic use of information sources should help lead to a greater utilization of their potential in the improvement of mental health services. However, exposure to information alone does not necessarily lead to adoption of innovations. In the Glaser and Ross study referred to above, special efforts were made to selectively disseminate an attractive brochure describing the weekend hospital model. A followup inquiry called further attention to the document. Subsequent sampling indicated that the proportion of potential users who were familiar with the model at that time had risen to 55 percent. Still, none of the facilities surveyed adopted the model, even when such a service was clearly needed.

The solution to effective use of information may lie in the employment of planned change techniques. Fairweather found that after publication of a book, plus other dissemination efforts, on a community lodge model for self-help by chronic mental patients only one hospital had adopted the plan.[3] But after an experiment with special techniques to promote knowledge utilization, 25 hospitals had initiated the plan or had indicated an intention to do so. Following 2 years of advocacy of more effective dissemination and project utilization practices, the adoption rate for NIMH applied research project results more than doubled.

The approach to planned change recommended here begins with systematic monitoring and assessing needs for change. (Rather surprisingly, again according to the Roberts and Larsen study, only 20.9 percent of persons developing innovations had done so in response to an identified need.) The NIMH publication *Use of Program Evaluation* offers some suggestions on techniques of frontline program evaluation. An annotated bibliography on program evaluation also is included.

The second step toward innovation through planned change is searching for information. Even with the use of this reference manual that may not always be a fruitful endeavor. Many who develop innovative mental health service techniques do not publish them. For that reason, consultation resources are included in this inventory. Even when research reports or descriptions presenting new programs are found, seldom will they match ideally with the circumstances at one's own facility. So the information yielded by most of the sources listed in this manual may at best represent helpful ingredients for creative planning of the innovation needed.

The third step in the recommended planned change process is the employment of special techniques of adoption. The reader may find useful some of the points outlined in the NIMH publication *A Manual on Research Utilization*. That manual contains a checklist of the factors which determine successful adoption of change.

REFERENCES

1. Roberts, A. O. H., and Larsen, J. K. *Effective use of mental health research information.* Palo Alto, Calif.: American Institutes for Research, January 1971. (Final Report for National Institute of Mental Health, Grant No. 1 R01 MH 15445.)

2. Glaser, E. M., and Ross, H. L. *Increasing utilization of applied research results.* Los Angeles, Calif.: Human Interaction Research Institute, 1971. (Final Report for National Institute of Mental Health, Grant No. 5 R12 MH 09250.)

3. Fairweather, George W. *Methods for changing mental hospital programs.* Michigan State University, East Lansing, Mich., May 1971. (Progress Report to National Institute of Mental Health, Grant No. R12 17888.)

SEARCH SERVICES

CENTER OF ALCOHOL STUDIES, Rutgers University, New Brunswick, N.J. 08903. Phone: 201/247-1766, Ext. 2383.

What it provides

The center, aided by a grant from NIMH, collects, classifies and abstracts scientific literature on alcohol and alcoholism. It maintains the Master Catalog of Alcohol Literature (more than 100,000 classified references in all major languages) and the Classified Abstract Archive of the Alcohol Literature (CAAAL). CAAAL consists of more than 10,000 English language abstracts dealing with the world literature since 1939 (and with selected topics before that date), with a topical index, published on edge-notched sorting cards for rapid retrieval.

Its publications are: *Quarterly Journal of Studies on Alcohol; International Bibliography of Studies on Alcohol; CAAAL Manual; Monographs of the Rutgers Center of Alcohol Studies; Alcoholism Treatment Digest.*

The Center answers inquiries, prepares topical bibliographies from CAAAL and provides photocopies of abstracts and library materials for a fee.

How to use it

Written inquiries are preferred. Retrospective bibliographies can be prepared on highly specific topics; questions should therefore be formulated in fullest possible detail. The Subject Index of the *Quarterly Journal of Studies on Alcohol* may be used as an immediate guide to recent world literature. CAAAL has 57 depositories in the United States, Canada and 13 other countries which can be used directly for accession to bibliography and abstracts. CAAAL headquarters (at the above address) will supply the address of the nearest depositories, and advice on searching procedure if requested. Use of the Center's special library, including CAAAL and collections of books, periodicals and full-text copies, is available to visiting researchers. A pamphlet describing the documentation and services of the Center may be obtained on request to the above address.

Comment

This is a useful resource for comprehensive information in a specialized field.

DEFENSE DOCUMENTATION CENTER: Building No. 5, Cameron Station, Alexandria, Va. 22314. Phone: 202/694-6900.

What it provides

The Defense Documentation Center (DDC), a field activity of the Defense Supply Agency of the Department of Defense, makes available from one central depository thousands of research and development reports produced each year by U.S. military organizations and their contractors.

Although originally created to serve the military, DDC services are available to all Federal Government agencies and to their contractors, subcontractors and grantees. However, a registration procedure is required prior to submitting requests for service.

The Center's technical report collection currently totals more than 950,000 titles. Those accessioned since March 1953, about 600,000, are under computer control for quick retrieval. Almost all areas of science and technology are included.

DDC announces the existence and availability of documents accessioned through its own announcement publication and through announcement media of the Department of Commerce.

While DDC is a major source of documents on completed research and development, it also is a central source of management and status information on Defense R & D in progress. The Center's major effort in this area, the Research and Technology Work Unit Information System, is designed to serve scientists, engineers and managers in the Federal R & D community with an automated rapid retrieval capability.

Essentially, the purpose of the R & T Work Unit Information System it to provide the means to determine quickly who is doing what research for whom, when, where and how. Approximately 25 data fields are used to describe each work unit, the logical segment of an R. & T. effort chosen by local management for purposes of technical control. The information is computerstored to permit retrieval in a wide variety of logical combinations of the data elements.

How to use it

Organizations registered for DDC Services may request copies of the technical reports in either full-size or microform. Technical reports accessioned by DDC since August 1965 are stored on microfiche; documents accessioned earlier are stored on microfilm.

The Center assesses a $3 service charge for paper copies of technical reports which are available in microfiche. This is presently the only charge assessed for any DDC service.

Authority to provide a document is determined by the security classification of the report and by any release limitations imposed by the source of the report. Such limitations are used to protect patent or proprietary rights, to minimize the liability of the Government and its employees.

Although only registered organizations can obtain documents from DDC, unclassified government reports are available, at a fee, to anyone through the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va. 22151.

Data from the work unit information system are available in a variety of formats to Defense components and other Federal agencies. Limited access to the data bank is available to contractors and grantees of Federal agencies through the use of a single, fixed format report.

Requests for registration pamphlets or for additional information should be addressed to the Defense Documentation Center, Attention: DDC-L, Building No. 5, Cameron Station, Alexandria, Va. 22314.

Comment

As would be expected, a majority of DDC material is not relevant to mental health but the Center's subject field "Behavioral and Social Sciences" has subheadings in psychology (in individual and group behavior) as well as in sociology, which might provide information of relevance to those in the mental health field.

DIRECT ACCESS TO REFERENCE INFORMATION: A XEROX SERVICE (DATRIX), 300 N. Zeeb Rd. University Microfilms, Xerox Corp., Ann Arbor, Mich. 48106. Phone: 313/761-4700.

What it provides

DATRIX provides access to doctoral dissertations written at more than 160 participating universities in the United States and Canada. When the service was inaugurated (July 1, 1967), it had a data base of 126,000 doctoral dissertations, covering a period from 1938–67. It was planned that approximately 90% of all dissertations currently being written would be added to that base.

DATRIX performs a search of the data base; retrieves bibliographic references; provides a printed listing with cross-references to *Dissertation Abstracts*, a monthly service of University Microfilms Library Services which publishes, arranged by subject, abstracts of recently completed dissertations; supplies microfilm or xerographically-reproduced bound copies of complete dissertations.

How to use it

DATRIX requests that users of its service provide them with a clearly descriptive summary of the subject field or research goals to help them search for the most relevant references. A simple order form is provided to aid the user in formulating his requests.

The following charges are made: computer search and listing of references—$5 per inquiry including the first 10 references, 10 cents for each additional reference, complete catalog of dissertation references, comprising one or more desired academic fields—special order (write University Microfilms Library Services for pricing information); choice of 35 mm. positive microfilm of dissertation (1¼ cent per page, $3 minimum) or paper copy reproduced xerographically from microfilm (4½ cents per page, $3 minimum).

Comment

This service provides prompt access to a useful body of research, and makes a retrospective search feasible. Listing of references and dissertation copies become the property of the subscriber.

EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC): Office of Education, Department of Health, Education and Welfare. Washington, D.C. 20202. Phone: 202/962-0104.

What it provides

ERIC is a national information system which disseminates educational research results, research-related materials, and other resource information that can be used in developing more effective educational programs. Through a network of 20 specialized centers or clearinghouses, each of which is responsible for a particular educational area, the information is monitored, acquired, evaluated, abstracted, synthesized, indexed and listed in ERIC reference products. Clearinghouse outputs includes monographs and state-of-the-art publications on educational problems and research.

Despite the fact that the ERIC focus is primarily on education, there is considerable overlap with some aspects of mental health, as, for example, the listings under the heading of drug addiction.

ERIC's publications are available from the Government Printing Office, Washington, D.C. 20402. The publications include: (a) *Research in Education,* Monthly Abstract Journal, and Semi-Annual and Annual Indexes, (b) *The Office of Education Research Reports,* 1956–65, *Indexes* and accompanying *Resumes,* (c) *Thesaurus of ERIC Descriptors,* Second Edition, (d) *Catalog of Selected Documents of the Disadvantaged, a Subject Index* and accompanying *Number and Author Index,* (e) *Pacesetters in Innovation* (by fiscal years 1967, 1968, 1969), (f) *Manpower Research, Inventory for Fiscal Years 1966–1967, 1968, 1969.*

How to use it

The procedure for search and retrieval of ERIC-stored documents is explained in great detail in the pamphlet "How to Use ERIC," which is available for 20 cents from the Government Printing Office (address above).

Illustrative of the procedure: the user selects a subject, such as drug addiction, and then narrows it down, for example to drug addiction in adolescents. He can identify from ERIC's *Thesaurus* the key descriptors appropriate to the entry. In this case, key search terms might be drug addiction, identification of drug addiction in high schools, and treatment of adolescent drug addiction. For current material, the user can refer to the monthly issues and annual cumulative index of ERIC's abstracts journal, *Research in Education,* searching the Subject Index under the descriptor terms obtained from the *Thesaurus.*

After searching the sub-areas and reading the resumes, he can decide whether he wants the full text of any documents. In that case, the documents are available in microfiche or hard copy from the ERIC Document Reproduction Service, 4936 Fairmont Avenue, Bethesda, Md. 20014. The cost of each document appears in the citation.

Comment

Anyone who is likely to have recurring need for making use of ERIC should be equipped with the "How to Use" pamphlet referred to above as well as the *Thesaurus.* It might also be useful to know that the *Current Index to Journals in Education* (CIJE) classifies current journal literature under ERIC descriptors. CIJE, in turn, publishes a *Current Literature Awareness Series* (CLASS), which summarizes research on given subjects, such as reading.

All ERIC Clearinghouses have active publication programs, including free newsletters. Anyone can get on the mailing list by submitting his name to the Clearinghouse. The addresses of all clearinghouses are listed below:

1. **Adult Education.** Syracuse University, 107 Roney Lane, Syracuse, N.Y. 13210
2. **Counseling and Personnel Services.** 611 Church Street, Ann Arbor, Mich. 48104.
3. **Early Childhood Education.** University of Illinois, 805 West Pennsylvania Avenue, Urbana, Illinois 61801
4. **Educational Administration.** Hendricks Hall, University of Oregon, Eugene, Ore. 97403
5. **Educational Media and Technology.** Institute for Communication Research, Stanford University, Stanford, Calif. 94305
6. **Exceptional Children.** The Council for Exceptional Children, Jefferson Plaza, Suite 900, 1499 Jefferson Davis Highway, Arlington, Va. 22202

7. **Higher Education.** George Washington University, Washington, D.C. 20006

8. **Junior Colleges.** University of California, 405 Hilgard Avenue, Los Angeles, Calif. 90024

9. **Library and Information Sciences.** 1140 Connecticut Avenue, N.W., Suite 804, Washington, D.C. 20036

10. **Linguistics.** Center for Applied Linguistics, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036

11. **Reading.** 200 Pine Hall, School of Education, Indiana University, Bloomington, Indiana 47401

12. **Rural Education and Small Schools.** New Mexico State University, Box 3AP, University Park Branch, Las Cruces, N.M. 88001

13. **Science Education.** Ohio State University, 1460 West Lane Avenue, Columbus Ohio 43221

14. **Social Science Education.** Social Science Building, University of Colorado, 970 Aurora Avenue, Boulder, Colo. 80302

15. **Teacher Education.** 1156 Fifteenth Street N.W., Washington, D.C. 20005

16. **Teaching of English.** National Council of Teachers of English, 508 South Sixth Street, Champaign, Illinois 61820

17. **Teaching of Foreign Languages.** Modern Language Association of America, 62 Fifth Avenue, New York, New York 10011

18. **Tests Measurement Evaluation.** Educational Testing Service, Princeton, New Jersey 08540

19. **The Urban Disadvantaged.** Teachers College, Box 40, Columbia University, New York, New York 10027

20. **Vocational and Technical Education.** Ohio State University, 1900 Kenney Road, Columbus, Ohio 43212

INSTITUTE FOR SCIENTIFIC INFORMATION (ISI): 325 Chestnut Street, Philadelphia, Pa. 19106. Phone 215/923-3300; Hotline Service: 215/923-0460.

What it provides

This organization provides a number of information-dissemination and retrieval services including the following:

Search Service: Provides retrospective searches of the scientific literature on any specified copy. Searches utilize all standard informal retrieval resources plus ISI's specially developed *Science Citation Index* (SCI), an interdisciplinary index to every issue of more than 2,200 journals published during a calendar year. Result is a bibliography of articles relevant to the subject under search.

Current Contents®: Reproduces the contents pages of domestic and foreign journals; issued weekly. Issued in seven editions, including one on behavioral, social and management sciences and one on life sciences. Contains addresses of authors so that researcher can correspond directly with authors and obtain reprints of articles of interest.

Original Article Tear Sheet Service (OATS)®: Enables researcher to retrieve promptly reprints of articles cited in above publications.

Automatic Subject Citation Alert (ASCA)®: Provides selective dissemination-of-information services, individualized to subscriber's needs. Purpose is to alert subscriber to the existence of articles in the current literature that have a high probability of being relevant to the specific area of interest. Provides weekly printout, listing bibliographic data matching subscriber's areas of interest.

How to use it

Search Service: User should provide ISI with the topic and as much information about his field of interest as possible. Combinations of subject-descriptive words and key authors or articles are helpful. Cost is $25 per hour, with a 2-hour minimum. At user's option, longer searches are conducted.

Current Contents: By subscription at $100 per year. Special rates available for groups, for multi-year subscriptions, and for educational organizations.

OATS: Can be ordered by mail or by telephone (using Hot-Line number given above). Charges: 50 cents per article plus $2 per article up to 10 pages, plus $2 for each additional 10 pages or fraction thereof. Surcharge of 50 cents per article for requests by telephone or those requiring airmail special delivery dispatching.

ASCA: Subscriber constructs a profile containing words, terms, articles, or authors pertinent to his field of interest. Cost of yearly subscription is determined by the types of components he uses in his profile, with the minimum fee being $115.

Comment

ISI's comment about its *Science Citation Index* says: "... enables one to trace the literature forward in time; that is, to go from an earlier cited article to a later citing article. This contrasts with conventional systems in which one usually locates a current article and builds up a bibliography by tracing backward in time through the footnotes cited in the article at hand."

MEDICAL LITERATURE ANALYSIS AND RETRIEVAL SYSTEM (MEDLARS). This is a service of the National Library of Medicine, 8600 Rockville Pike, Bethesda, Md. 20014. Phone 301/496-6193.

What it provides

MEDLARS is a computer system that is used to prepare *Index Medicus* and various other indices and bibliographies for publication. MEDLARS also offers a retrieval service on demand. The "Guide to MEDLARS Services," which can be obtained from the National Library of Medicine at the above address, should be requested by anyone interested in using this service. MEDLARS files do not contain citations to periodic literature published before mid-1963.

The National Library of Medicine literature analysts index material from some 2,300 journals. They assign an average of eight headings, of maximum specificity, to each article. Three of these, on the average, are designated as print headings and are intended to convey the major purpose of the author. These are printed in *Index Medicus*. The additional non-print headings are stored in the computer and may be retrieved upon demand.

The computer will print bibliographies either on 3" x 5" cards or on 8½" x 11" paper. Printout will include the authors' names, the search number, title of the article, volume number, pagination, month and year, journal title abbreviation, and subject headings with which the article was indexed, including asterisked print headings for citations printed in *Index Medicus*. Demand bibliographies are generally prepared for individual requesters, and as such are not widely circulated. However, some of wide import are accumulated and are available as the Literature Search series from the Office of Public Information at the National Library of Medicine. These are announced periodically in the *Journal of the American Medical Association*, the *Journal of the American Dental Association*, *Drug Research Reports* and *Public Health Reports*.

How to use it

The vocabulary by which MEDLARS is addressed is known as MeSH, "Medical Subject Headings." MeSH, published annually, consists of: an alphabetical listing of subject headings and cross references; lists of subheadings; categorized lists; lists of new and deleted headings; and nomenclature sources. In preparing a request for a MEDLARS demand bibliography, one should be familiar with MeSH terminology.

Demand bibliographies will be prepared free of charge for scientific investigators and members of the health professions. Requests must be submitted on a MEDLARS Search Request form. These forms are available in local medical libraries and from the National Library of Medicine. They may be submitted through local medical libraries or directly to regional MEDLARS stations.

The "Guide to MEDLARS Services" asks that users do not request: (1) citations to articles published prior to January 1967; (2) author searches which are available in *Index Medicus;* (3) verification of specific citations which can again be obtained in *Index Medicus;* (4) citations on a single subject or on easily coordinated concepts, which can be readily found in *Index Medicus* under appropriate headings; (5) data or factual information which can be found in standard handbooks; (6) subject matter not in the scope of *Index Medicus.*

Comment

It should be noted that MEDLARS has certain inherent limitations. For example, if a concept cannot be expressed in MeSH terminology, citations can be retrieved only with difficulty. MeSH lacks subject headings for the following concepts: degree, time sequence, qualitative judgments, acute or chronic conditions. Thus, for example, if the mental health worker wants citations related to the effectiveness of therapy, he will have difficulty retrieving these citations, since effectiveness involves qualitative judgments.

It is our impression that direct personal communication with the individual search analyst at the regional MEDLARS station greatly facil-

The various MEDLARS search stations are:

Region	Name of Region	States	Search Center(s)
1	New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.	MEDLARS Search Center, The Francis A. Countway Library of Medicine, 10 Shattuck St., Boston, Mass. 02115.
2	New York	New Jersey (the 11 Northern Counties), New York.	MEDLARS Center, Regional Medical Library, New York Academy of Medicine, 2 East 103d St., New York, N.Y. 10029.
3	Mid-Eastern	Delaware, New Jersey (the 11 Southern Counties), Pennsylvania.	Mid-Eastern Regional Library, College of Physicians of Philadelphia Library, 19 South 22d St., Philadelphia, Pa. 19103.
4	Mid-Atlantic	District of Columbia, Maryland, North Carolina, Virginia, West Virginia.	Mid-Atlantic Regional Medical Library, P.O. Box 30260, Bethesda, Md. 20014.
5	East Central	Michigan	MEDLARS Center, University of Michigan, 3490 Kresge Medical Research Building, Ann Arbor, Mich. 48104.
		Kentucky, Ohio	MEDLARS Center, Health Center Library, Ohio State University College of Medicine, 1645 Neil Ave., Columbus, Ohio 43210.
6	Southeastern	Alabama, Florida, Georgia, Mississippi, Puerto Rico, South Carolina, Tennessee.	MEDLARS Center, Medical Center Library, University of Alabama, 1919 7th Ave. South, Birmingham, Ala. 35233.
7	Midwest	Illinois, Indiana, Iowa, Minnesota, North Dakota, Wisconsin.	Midwest Regional Medical Library, The John Crerar Library, 35 West 33d St., Chicago, Ill. 60616.
8	Midcontinental	Colorado, Kansas, Missouri, Nebraska, South Dakota, Utah, Wyoming.	MEDLARS Center, Denison Memorial Library, University of Colorado Medical Center 4200 East 9th Ave., Denver, Col. 80220.
9	South Central	Arkansas, Louisiana, New Mexico, Oklahoma, Texas.	MEDLARS Center, Texas Medical Center, Jesse H. Jones Library Bldg., Houston, Tex. 77025.
10	Pacific Northwest	Alaska, Idaho, Montana, Oregon, Washington.	Pacific Northwest Regional Health Sciences Library, University of Washington, Seattle, Washington. 98105.
11	Pacific Southwest	Arizona, California, Hawaii, Nevada.	MEDLARS Center, Biomedical Library, Center for Health Services, University of California, Los Angeles, Calif. 90024.

itates obtaining articles of relevance to the inquirers' needs. Articles not in the field of medicine seem to be particularly difficult to obtain and the search analyst often is much better trained in getting direct medical citations than in retrieving relevant psychological material.

MENTAL HEALTH MATERIALS CENTER: Information Resources Center for Mental Health and Family Life Education, 419 Park Avenue South, New York, N.Y. 10016. Phone: 212/889-5760.

What it provides

The Center's purpose is "to facilitate the skillful selection and creative application of educational materials in support of mental health and family life education programs." The Center offers two subscription services: the comprehensive Information Resources Center (IRC) service, and A Selective Guide to Materials for Mental Health and Family Life Education.

The comprehensive IRC service, offered primarily to national, state and local agencies and organizations (who pay from $150 to $450 a year depending on the size of the population area they serve), provides: (a) the Selective Guide, consisting of loose leaf binders containing about 180 individual annotated bulletins on mental health programs based on publications reviewed by the staff over the previous five years and new bulletins as they are issued; (b) copies of all special publications issued by IRC; (c) consultation by mail on questions about the selection and use of publications and audiovisual aids appropriate for use in mental health and family life education programs; (d) preferential status to staff members of subscribing agencies in applying for seminars conducted by IRC.

The Selective Guide alone costs $50 a year and is a constantly updated listing of pamphlets, books, and films on such subjects as child development, family relations, aging, alcoholism, drug abuse, and suicide prevention. Its looseleaf binder format accommodates new entries as they are released. One volume is not completed and a second volume will be completed in 1971. The cost is $100 for both volumes.

How to use it

The materials are available on a subscription basis; inquiries should be directed to the above address.

Comment

The service provided by this organization is particularly applicable to organizations with lay memberships, but professional researchers and practitioners also might find its materials informative and useful.

THE NCVA CLEARINGHOUSE. 1735 Eye Street, N.W., Washington, D.C. 20006. Phone: 202/466-8444

What it provides

This service is offered by the National Center for Voluntary Action. It collects and makes available information on volunteer projects throughout the country, researching information on specialized small clearinghouse operations, technical assistance organizations, and hard-to-locate pamphlet material. There is no charge for the service.

The specific subject areas researched are: civic affairs, communications and public relations, community services, education, employment and jobs, entrepreneurship, family-youth-children-oriented services, health and mental health, housing, interracial and intergroup relations, legal rights, law enforcement and crime prevention, nutrition, organization and administration, physical environment (exclusive of housing), psychosocial support services, recreation, transportation.

Those making inquiries are provided samples of relevant case histories and, whenever possible, referral is made to additional sources.

A newsletter, *Voluntary Action News*, is available upon request at no charge.

How to use it

Those requesting information should indicate their area of interest from among the categories listed above.

Comment

Limited service, but additional coverage of a field (volunteers) also covered by ERIC and the National Clearinghouse for Mental Health Information.

NATIONAL CLEARINGHOUSE FOR DRUG ABUSE INFORMATION (NCDAI): National

Institute of Mental Health, 5600 Fishers Lane, Rockville, Maryland 20852. Phone: 301/443-4443.

What it provides

The Clearinghouse operates as a central source for the collection and dissemination of drug abuse information within the Federal government and serves as a coordinating information agency for groups throughout the country involved in drug abuse information.

The major activities of the NCDAI include the distribution of drug abuse information materials, the answering of inquiries by mail and phone, the referral of specialized requests to appropriate government or private resouces, the publication of recurring secondary source reference materials and fact sheets, and the operation of an up to date and comprehensive computerized information storage and retrieval system.

The Clearinghouse disseminates information on pertinent films, records, plays, posters, and any other material available. Individual requests for materials are filled as are special bulk orders. The Clearinghouse has developed packets of informational materials suitable for the general needs of the interested and concerned public as well as groupings of publications and films geared to a particular topic. The Clearinghouse also provides consultation to group preparing for a seminar, lecture series, panel discussion or conference in order to assemble the most pertinent and useful materials for that particular event. There is no charge for these services.

An updated *Audiovisual Catalogue* of NCDAI films will be available as a concise guide on how to obtain films for review, rental, loan or purchase in addition to narrative summaries of content.

An *Annotated Bibliography of Drug Dependence and Abuse* is being developed by the NCDAI. An *Annotated Directory of Drug Abuse Programs in the United States* will also be available in the near future. The *Annotated Directory* will include several listings of programs according to state, city and type of program as well as narrative descriptions.

The Clearinghouse is also preparing *A Guide to Federal Drug Abuse Programs* which will be updated continuously as a part of NCDAI's role in enhancing the responsiveness of the Federal government to the needs of the public.

How to use it

The Clearinghouse has developed a file of resource materials including bibliographies, articles, speeches, published guidelines, descriptions of programs and government publications. These materials are chosen to reply to inquiries if the respondent does not wish a complete search of the literature on a particular topic, but merely needs some representative samples of the kind of work being done in that area.

If a request for information requires a thorough search of the literature pertinent to the subject of inquiry, the staff will utilize the NCDAI computerized information storage and retrieval system by drawing from either the technical or drug abuse program file. Requests for exhaustive coverage of a topic will be processed by completing a computer search and sending the relevant print outs, listing, or bibliography to the inquirer free of charge. In this way the intensive, in-depth needs of the individual requesting information can be met in a comprehensive and expedient manner. When the demand for a computer search on a specific topic recurs over a delineated period of time and the subject grows to have a more general audience, the Clearinghouse will publish the most recent and complete version of the search and thereby have it readily available for immediate distribution.

The NCDAI "Selected Reference Series" and "Report Series" are a reflection of these recurring requests for information. Some "Report Series" publications include issues on government publications, training institutes, the procurement of drugs for research purposes, marijuana research and voluntary action progams. Some topics planned are Federal funding of drug abuse programs, reports of specific drugs of abuse such as mescaline, MDA, and drug abuse and religion. The "Selected Reference Series" consists of issues of short, topical bibliographies on methadone, the abuse of drugs by young people, drug abuse in industry, educational materials, patterns of drug abuse among minority groups, current treatment modalities, the identification of drugs of abuse in biological fluids and the genetic effects of the drugs of abuse.

Comment

A clearly written request to NCDAI will enable staff to decide whether the requester will be best served by a computer search or another response.

NATIONAL CLEARINGHOUSE FOR MENTAL HEALTH INFORMATION (NCMHI): National Institute of Mental Health, 5600 Fishers Lane, Rockville, Md. 20852. Phone: 301/443-4136.

What it provides

The mission of the Clearinghouse is to provide rapid dissemination of research results, program descriptions and theoretical views extracted from NIMH projects and from the literature of mental health disciplines. It provides a comprehensive and readily accessible store of information capable of answering two needs: current awareness and retrospective searching.

Currently NCMHI has in computer storage some 100,000 abstracts on the following major topic areas: psychological and social aspects of behavior; personality; cognition and higher mental processes; physiological psychology; diagnosis, treatment, and prognosis of mental illness; social and environmental factors in mental health; psychopharmacology; training of mental health personnel; occupational mental health; crime and delinquency; social work; drug dependence and abuse; and children and youth.

The following kinds of information are available:

Abstract Journals with Indexes

Psychopharmacology Abstracts
Crime and Delinquency Abstracts

Journal with Abstracts

Schizophrenia Bulletin

Digests

Mental Health Digest

Bibliographies

Bibliographies are published in selected subject areas as the need arises. Then they carry citations alone or citations plus annotations or abstracts.

Abstracts

Printouts provide usual bibliographic citation information plus the first author's address.

The abstracts are written to embrace the purpose, method, and essential findings of research projects.

Directories

Mental Health Directory

Contains information about more than 3000 Federal, State, and local mental health facilities. It is an invaluable reference tool for planners, administrators, practitioners, as well as persons in need of services.

How to use it

The Clearinghouse endeavors to answer all requests within a two-week period. Occasionally, however, the complexity of the request may require a longer period for preparation of an appropriate response.

Requests can be answered most effectively if the need for information is spelled out concisely and objectively. It will also help if the requester can provide some background information on his own role and responsibilities in the use of the information. Identification of the ultimate users of the requested information proves helpful. For example, if the information is going to be used in the presentation to a Parent Teacher Association meeting the preparation of the material by the Clearinghouse would be quite different from what it would be if the information is intended for a group of scientists who are specialists in the particular topical area. Because key words used in retrieving material necessarily are limited, it is much more helpful for the searchers to have some discussion of the topic that the requester has in mind rather than the requester's own suggested key word to be used in retrieval. The requester's key word, of course, may not match any code in the retrieval system, which means that the searchers must make a guess on the best match.

There is no charge for information retrieval services. However, certain of the publications of the Clearinghouse are available on a subscription basis only. Costs, if any, for specific publications can be learned by calling or writing the Clearinghouse.

Comment

The *researcher* who is planning a study or the *writer* who is preparing a manuscript may find the abstract services of the Clearinghouse most helpful. Information provided on citations and in the abstracts follows what usually is required or expected in "reviewing the literature." *Practitioners,* however, also will find the publications of the Clearinghouse—particularly the digests—helpful in keeping abreast of refined techniques which they may wish to consider adopting.

NATIONAL REFERRAL CENTER FOR SCIENCE AND TECHNOLOGY: Library of Congress, 10 First Street S.E., Washington, D.C. 20504. Phone 202/426-5687.

What it provides

The Center's purpose is to function as an intermediary, directing "those who have a question concerning a particular subject to organizations or individuals (who have) specialized knowledge of that subject . . . The concept of 'information resources' which the Center has adopted is an extremely broad one. It extends to any organization, institution, group, or individual with specialized knowledge in a particular field and a willingness to share this knowledge with others."

The Center does not provide bibliographic reference services or answers to specific questions. It provides name, address and a brief description of the activities of each information source relevant to an inquirer's area of interest. To provide this referral service, the Center maintains a continuously updated national register of information resources. The Center's only criterion for registering a resource is the ability and willingness to supply information to others; size of the resource is not considered. The referral service is available free to any individual working in physical, biological, social and engineering sciences.

How to use it

Although no special forms are required, the Center will reply more effectively if a precise statement of the information desired is provided and if the Center is told which information resources have already been contacted. A statement of special qualification, such as professional memberships, may entitle an inquirer to resources that otherwise would not be open. Referral requests may be made in writing to the Center or by calling (202) 967-8265.

The Center has published four directories and a fifth is now in press. The two that are most relevant to mental health are: (a) *A Directory of Information Resources in the United States: Social Sciences,* October 1965; (b) *A Directory of Information Resources in the United States: Federal Government,* June 1967. They may be purchased for $1.50 and $2.75 respectively, from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Comment

Although the direct services performed by this resource are somewhat limited, it provides indirect access to a great range of information sources.

SCIENCE INFORMATION EXCHANGE (SIE): 300 Madison National Bank Building, 1730 M Street N.W., Washington, D.C. 20036. Phone, Main Number: (202) 381-5511, Life Sciences Division: 202/381-5721; Physical Sciences Division: 202/381-5711.

What it provides

The Exchange operates under the aegis of the Smithsonian Institution and is partially supported by the National Science Foundation. It has served as a national registry of research in progress since its inception in 1948. Originally founded by federal agencies interested in closer communication concerning their rapidly expanding programs of research support, the collection of Notices of Research Projects available has grown to the level of 100,000 received and processed each year. It has become the most comprehensive source of information in existence concerning ongoing or planned research.

Research records (Notices of Research Projects) are updated each year, and are written by the principal investigators doing the work. Most of the Notices are received from agencies supporting research (federal programs, private foundations, professional organizations, industries, local governments), although an increasing number come from universities and other organizations who voluntarily describe work supported by local funds.

For the most part, the collection includes domestic and foreign research supported from United States sources, although certain programs funded by other countries have been voluntarily submitted and processed. Coverage includes all fields of basic and applied research, including biological, medical, agricultural, physical, engineering, and social sciences.

Information in the active search file at the Exchange represents the previous two-year period of research. Older project summaries are available on a historical file. The "Notice of Research Project" (NRP), which is the basic document of the Exchange, includes the name of the granting agency, the names and addresses of principal and associate investigators, the location of the work, its title, and a 200-word summary of the project.

How to use it

Services are available on a fee basis to all interested persons, and can be obtained by submitting a "Request for Services" form, or by writing or telephoning the Exchange, stating the specific research or problem on which information is desired. Services include compilations of Notices of Research Projects appropriate to a specific or general subject, computer listings of project titles arranged by location of the work or by source of support, tabulations of numbers of studies and amounts of support by year in a given field or a given geographic area, and project information in response to questions concerning particular locations of work or the work of particular individuals. This type of information is used by program directors and administrators to assist in the planning of research fund distribution, as well as by individual investigators who want to know of research in areas related to their own.

Comment

The main advantage of SIE is that it bridges the gap between initiation of projects and their publication, usually years later. Duplication, overlap, and relevant programs can be identified quickly and one's own research program modified in consequence. Surveys conducted by SIE indicate that 95% of users receive information concerning investigators working in their own field of interest but previously unknown to the requester.

SCIENCE INFORMATION OFFICE, Veterans' Administration, 810 Vermont Avenue N.W., Washington, D.C. 20410. Phone: 202/389-3879.

What it provides

This office maintains records of all ongoing medical research projects in hospitals and clinics of the Veterans Administration. It publishes an annual report containing a listing of all VA research projects, the location of the project, principal investigators, and a list of research publications.

How to use it

Requests for information should be directed to the Chief, Science Communications Office (15C) at the above address.

Comment

Services are limited to answering inquiries and making referrals.

TECHNICAL INFORMATION SERVICE, U.S. Department of Commerce, Springfield, Va. 22151. Phone: 703/321-8543.

What it provides

The Clearinghouse serves as a focal point for the collection, announcement, and dissemination of unclassified U.S. Government-sponsored research and development reports and translations of foreign technical literature to the scientific, technical and industrial communities.

More than 50 Government departments and agencies presently use the Clearinghouse facilities to disseminate their reports. Some 45,000 reports and translations enter the collection each year. The collection now includes more than 600,000 titles.

Documents are announced in *U.S. Government Research and Development Reports (USGRDR)*, a journal of abstracts issued twice a month ($30 a year); *Clearinghouse Announcements in Science and Technology*, published concurrently with *USGRDR* and organized in 46 separate categories, providing a convenient method to survey the flow of information (first category, $5 a year; each two additional categories, $5 per year; *Fast Announcement Service (FAS)*, descriptive abstracts of selected reports (about 10 percent of the collection) compiled by subject system of 57 categories, issued as warranted, intended to provide immediate access to reports reviewed by technologists for their significance to science and industry (any category, $5 per year).

How to use it

Any user who anticipates frequent utilization of Clearinghouse services should have access to the publications listed above.

All reports should be ordered by accession number. If the number is not known, furnish the complete title exactly as published. Include any other identifying information, such as the contract number, sponsoring Federal agency, author of report; or cite the source of information.

Almost all of the documents in the Clearinghouse collection are priced at $3 for paper copies, 65 cents for microfiche. Order forms and prepayment coupons are available from the Clearinghouse at the above address.

Comment

Although the collection is oriented toward the technical and scientific community and toward industry, it also includes titles in the behavioral/sciences and the biological/medical sciences, and accordingly is a resource for reports related to mental health.

CONSULTING RESOURCES

In addition to the search services discussed on the foregoing pages, a number of government agencies have offices or branches devoted primarily to research utilization. The mission of these offices is primarily to disseminate—or to be instrumental in the dissemination of—findings from research, experimental and demonstration projects funded by their respective agencies. They do not have sufficient in-house staff to serve as an information resource for everyone who might wish to contact them, but they do provide very knowledgeable guidance and service to the projects they fund. Some of these offices are:

Division of Practice Improvement, National Center for Educational Communication, Office of Education, Department of Health, Education, and Welfare, Washington, D.C. 20015

Research Utilization Branch, Division of Research and Demonstration Grants, Social and Rehabilitation Service, Department of Health, Education, and Welfare, Washington, D.C. 20201.

Program Utilization Division, Office of Special Manpower Programs, Manpower Administration, Department of Labor, 1111 20th Street NW., Washington, D.C. 20210.

Persons responsible for the effectiveness of mental health services may find the consultants in State and Federal agencies good sources of direct information about new program ideas. By the nature of their work these consultants have the opportunity to visit many settings and to learn of numerous solutions to service delivery problems. Often State Mental Health Commissioners have among their staff members consultants who are available to report on how other facilities are providing services. Staff of the National Institute of Mental Health also are in a position to become acquainted with new practices that may never find their way into publication. The program director interested in learning how others are tackling problems similar to those he faces may wish to contact the **Mental Health Services Development Branch,** National Institute of Mental Health, 5600 Fisher's Lane, Rockville, Maryland 20852. Staff members of that Branch either will be familiar with new practices around the Nation or will be able to refer the inquirer to other consultants within the Institute who have special knowledge in the inquirer's field.

Mental health consultants in the Regional Offices of the Department of Health, Education, and Welfare represent excellent sources of assistance in thinking through plans for a new program. These consultants are especially acquainted with how program problems are solved in localities similar to those of any given inquirer. Regional Offices, together with the States they service, are listed below:

REGION I: BOSTON, MASS. John F. Kennedy Federal Building, Boston, Mass. 02203. Phone: 617/223-6824.

STATES: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.

REGION II: NEW YORK, N.Y.: 26 Federal Plaza, New York, N.Y. 10007. Phone: 212/264-2567.

STATES: New Jersey, New York, Puerto Rico, Virgin Islands.

REGION III: PHILADELPHIA, PA.: P.O. Box 12900, Philadelphia, Pa. 19108. Phone: 215/597-9135-6.

STATES: District of Columbia, Delaware, Maryland, Pennsylvania, Virginia, West Virginia.

REGION IV: ATLANTA, GA.: Room 404, 50 7th Street NE., Atlanta, Ga. 30323. Phone: 404/526-5231.

STATES: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.

REGION V: CHICAGO, ILL.: Room 712, New Post Office Building, 433 West Van Buren Street, Chicago, Ill. 60607. Phone: 312/353-5226.

STATES: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.

REGION VI: DALLAS, TEX.: 1114 Commerce Street, Dallas, Tex. 75202. Phone: 214/749-3426.

STATES: Arkansas, Louisiana, New Mexico, Okiahoma, Texas.

REGION VII: KANSAS CITY, MO.: 601 East 12th Street; Kansas City, Mo. 64106. Phone: 816/374-5291.

STATES: Iowa, Kansas, Missouri, Nebraska.

REGION VIII: DENVER, COLO.: Room 9017, Federal Office Building, 1961 Stout Street, Denver, Colo. 80202. Phone: 303/837-3177.

STATES: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.

REGION IX: SAN FRANCISCO, CALIF.: Federal Office Building, 50 Fulton Street, San Francisco, Calif. 94102. Phone: 415/556-2215.

STATES: American Samoa, Arizona, California, Guam, Hawaii, Nevada, Wake Island.

REGION X: SEATTLE, WASH.: Arcade Bldg. Mezzanine, 1321 Second Avenue, Seattle, Wash. 98101. Phone: 206/442-0524.

STATES: Alaska, Idaho, Oregon, Washington.

INDEXES TO THE PERIODICAL LITERATURE

Bibliography of medical reviews. 1955– National Library of Medicine, 8600 Rockville Pike, Bethesda, Md. 20014.

Arrangement: Annual cumulation; arranged by subject and name indexes. From 1955 to February 1965, this index was issued annually as a separate publication from *Index medicus.* Since March 1965 it appears in the front of each monthly issue of *Index medicus.*

Content: Consists of an index of review articles compiled from *Index medicus.*

Comment: An indispensable tool for review articles and for a quick, efficient review of the literature.

Child development abstracts and bibliography. 1927– University of Chicago, 5750 Ellis Avenue, Chicago, Ill. 60637.

Arrangement: Issued three times per year with two numbers in each issue. Classified subject arrangement with an author index in each issue. Annual subject and author indexes.

Content: Covers the fields of psychology, psychiatry and sociology in 150 journals. Includes book reviews, abstracts, journal articles.

Comment: Covers a small number of mental health journals.

Coordinate index reference guide to community mental health. Golann, Stuart E., New York: Behavioral Publications, Inc. 1969.

Arrangement: This is issued in book form rather than as a periodically issued index.

Contents: Consists of a coordinate index of more than 1,500 titles, classified according to 241 categories; a cross-reference index; a bibliography; other sources of information.

Comment: A comprehensive and extremely useful tool for investigation of subjects related to community mental health.

Crime and delinquency abstracts. 1963– National Clearinghouse for Mental Health Information, NIMH, 5600 Fishers Lane, Rockville, Md. 20852.

Arrangement: Bimonthly; each issue has subject and author indexes. Annual cumulative subject and author indexes. (*Title Change:* V. 1–3, 1963–1935, titled *International bibliography of crime and delinquency.*)

Content: Contains detailed abstracts of current literature and ongoing research projects related to mental health and allied fields.

Comment: Covers a large number of journals not indexed in standard periodical indexes or in *Psychological abstracts.*

Cumulative index to nursing literature. 1956– Seventh Day Adventist Hospital, 1509 Wilson Terrace, Glendale, Calif. 91206.

Arrangement: Bimonthly; subjects and authors indexed alphabetically together. Annual cumulation.

Content: Indexes but does not abstract articles in over 114 English-language journals in nursing and related health sciences fields. Also is a guide to book reviews, pamphlets, illustrated materials, films and film strips.

Comment: Indispensable to searching the nursing literature.

Excerpta medica. 1947– Excerpta Medica Foundation, 119-123 Herengracht, Amsterdam C, Netherlands.

Arrangement: This is a current monthly abstracting service presented in 28 different sections dealing with medicine and allied fields. Abstracts are in English. The index is especially valuable for foreign language medical journals.

Comment: There is much overlap with *Index medicus,* so that only the abstracting service is noted here.

Hospital literature index. 1945– American Hospital Association, 840 North Lake Shore Drive, Chicago, Ill. 60611.

Arrangement: Quarterly; annual index and 5-year cumulations. Arranged by subjects with separate author index. There are no abstracts (each 5-year volume is called Cumulative Index of Hospital Literature.)

Content: Indexes approximately 578 English language journals and some popular and nonmedical journals. Primarily concerned with the administration, financing and planning of hospitals and related institutions.

Comment: Lists articles concerned with psychiatric hospitals and gives statistics on mental patients.

Index medicus. (More or less continuous since 1879 to present.) National Library of Medicine, 8600 Rockville Pike, Bethesda, Md. 20014.

Arrangement: Monthly; annual cumulations. Arranged by subject, based on the publication *Medical Subject Headings* (MeSH). Each month contains the *Bibliography of Medical Reviews* in the front of each issue, a subject index and an author index. (Called *Quarterly Cumulative Index Medicus; Cumulated Index Medicus* at various times.)

Content: Does not abstract, but contains, by subject heading, listings (by journal title) of the world periodical literature. English language articles appear first, followed by those in foreign languages. The latter have their titles translated into English. Does not contain proceedings of congresses, symposia and the like. It does include coverage of several thousand biomedical journals of the world. (Copies of bibliographies of wide general interest [from MEDLARS computerized searches] are listed in the front of each monthly issue.)

Comment: Indispensable English language tool for the biomedical community. The user is urged to consult MeSH before beginning a search.

International nursing index. 1966– American Journal of Nursing Company, 10 Columbus Circle, New York, N.Y. 10019.

Arrangement: Quarterly; annual cumulations. Arranged by subject and author indexes.

Content: Produce in cooperation with the National Library of Medicine, covering nursing journals in English and foreign languages. Covers periodicals not indexed in *Index medicus*. Does not abstract articles and does not list book reviews, summaries or letters to the editor.

Comment: This with *Cumulative index to nursing literature* gives good coverage of the nursing periodicals.

Mental retardation abstracts. 1964– National Clearinghouse for Mental Health Information, NIMH, 5600 Fishers Lane, Rockville, Md. 20852.

Arrangement: Quarterly; classified subject arrangement with quarterly and annual subject and author indexes.

Content: Abstracts journals in the mental retardation field and in related health sciences fields.

Comment: A good source of current, specialized articles.

Poverty and human resources abstracts. 1966– Institute of Labor and Industrial Relations, University of Michigan, 108 Museum Annex, Ann Arbor, Mich. 48104.

Arrangement: Bimonthly; subjects and authors indexed alphabetically together. Annual cumulation.

Content: Contains abstracts of current literature (books, journal articles, reports of special projects) relating to minority groups, urban problems, the economically disadvantaged, manpower programs, community development, etc.

Comment: A useful guide to an active and hard-to-get-at subject area. Contains overview essays as well as abstracts.

Psychological abstracts. 1927– American Psychological Association, 1200 - 17th Street NW., Washington, D.C. 20036.

Arrangement: Monthly; classified subject arrangement, with author and subject indexes. Annual cumulation.

Content: Contains nonevaluative abstracts of the literature in psychology and related disciplines. Abstracts are given for both books and periodical literature in English.

Comment: Indexes a number of journals not normally covered by medical indexes, mainly in education and business. An indispensable tool in psychology.

Psychopharmacology abstracts. 1961– National Clearinghouse for Mental Health Information, NIMH, 5600 Fishers Lane, Rockville, Md. 20852.

Arrangement: Monthly; abstracts are classified by category. Each issue has author and subject indexes; also annual author and subject indexes.

Comment: Provides good coverage of current research.

Quarterly journal of studies on alcohol. Section B, Documentation. 1939– Rutgers Center of Alcohol Studies, Rutgers, The State University, New Brunswick, N. J. 08903.

Arrangement: Quarterly; cumulative index prepared every ten years; one covering decade of 1960's now in preparation. Index in its present form has been separated from the *Quarterly* itself only since March 1968.

Content: Consists of abstracts of current literature, current bibliography and comprehensive subject index.

Comment: Covers all facets of the subject, not only psychiatric and psychological but also medical, legal, pharmacological.

Readers' guide to periodical literature. 1900– H. W. Wilson & Co., 950 University Avenue, Bronx, N.Y. 10452.

Arrangement: Semi-monthly; cumulated annually. Arranged in one dictionary alphabet with authors and subjects intermixed.

Content: Does not abstract, but indexes about 130 U.S. general and non-technical periodicals of a popular character.

Comment: Valuable for popular journal articles in medicine and the social sciences.

Rehabilitation literature. 1956– National Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Ill. 60612.

Arrangement: Monthly; classified subject arrangement of the abstract section, with monthly and annual author indexes.

Content: Contains special articles and abstracts of interest in rehabilitation, as well as book reviews and special features. Abstracts English language periodicals only.

Comment: Useful for both mental and physical rehabilitation.

Research grants index. 1961– National Institutes of Health, Division of Research Grants, U.S. Public Health Service, Bethesda, Md. 20014.

Arrangement: Annual; since 1963. The first volume contains a subject index to research, and the second, a list of investigators and grant numbers.

Content: Lists biomedical research financed by the U.S. government in the United States and abroad, research in progress and the investigators.

Comment: An unusual approach for the mental health worker, but it does give a good picture of ongoing research projects and their investigators.

Science citation index. 1961– Institute for Scientific Information, 325 Chestnut Street, Philadephia, Pa. 19106.

Arrangement: Two of the volumes are quarterly, the Citation Index and the Source Index. The Citation Index contains a list of authors writing in a particular year and the papers which they cite in their bibliographies. The Source Index contains additional information about the citing authors. There is a third volume, the Permuterm Subject Index, issued annually.

Content: Indexes, but does not abstract, over 1,500 journals, about half of which are in the biomedical sciences. These include both English and foreign language journals. Coverage includes articles, books, book reviews, abstracts, editorials, letters, and technical notes.

Comment: This tool presents a new concept in literature searching, but, once the user understands the principles underlying the arrangement, the searches are very rewarding. Upon first using it, the services of a librarian are desirable for instruction.

Social sciences and humanities index. 1916– H. W. Wilson & Co., 950 University Avenue, Bronx, N.Y. 10452.

Arrangement: Quarterly; cumulated annually. Indexes authors and subjects alphabetically together. (Formerly *International index to periodicals.*)

Content: Indexes, but does not abstract; contains articles from scholarly journals in fields related to medicine, such as anthropology, social work, sociology and the humanities. Does not index foreign language journals.

Comment: Particularly good in fields related to medicine.

Sociological abstracts. 1953– Sociological Abstracts, Inc., 2315 Broadway, New York, N.Y. 10024.

Arrangement: Eight issues per year; cumulative index. Classified subject arrangement with an author index.

Content: Indexes over 800 English and foreign journals selectively, including articles, monographs and books.

Comment: Particularly strong in social work and sociology.

REVIEWS FOR KEEPING CURRENT

Alcoholism treatment digest. Rutgers Center of Alcohol Studies, Rutgers, The State University, New Brunswick, N.J. 08903.

Published: Five times per year.

Content: Contains approximately 20 brief topical reviews per year. Is syndicated to state health agencies who publish and distribute the materials under various mastheads to their own mailing lists.

American Journal of Orthopsychiatry. 1930– American Orthopsychiatric Association, 1790 Broadway, New York, N.Y. 10019.

Published: Five times per year.

Content: Multidisciplinary mental health focus; four categories of articles include Theory and Review, Research, Clinical, Delivery of Services.

American Journal of Psychiatry. American Psychiatric Association, 1700 18th Street NW., Washington, D.C. 20009.

Published: Monthly.

Content: Range of articles from the field; this is the official journal of the American Psychiatric Association.

APA Monitor. American Psychological Association, 1200 17th Street NW., Washington, D.C. 20036.

Published: Monthly. Sent automatically to APA members; can be ordered by non-members.

Content: Newspaper of APA activities and progress; purpose is "to expedite communication among the members of APA . . . inform readers of the events that are shaping psychology today . . ."

Behavioral science. 1956– Mental Health Institute, University of Michigan, Ann Arbor, Mich.

Published: Monthly.

Content: Broad interdisciplinary approach and particularly valuable in the mental health field. Contains occasional research reports.

Community mental health journal. 1965– Behavioral Publications, 2852 Broadway, Morningside Heights, New York, N.Y. 10025.

Published: Bimonthly.

Content: Has short articles and book reviews. Is devoted to emergent approaches in mental health research, theory and practice as they relate to community, broadly defined.

Digest of neurology and psychiatry. 1932– Institute of Living, Retreat Avenue, Hartford, Conn. 06103.

Published: Monthly.

Content: Contains abstracts and reviews in psychiatry, neurology and mental health.

Hospital and community psychiatry. 1950– American Psychiatric Association, 1700 18th Street N.W., Washington, D.C. 20009.

Published: Monthly.

Content: Has short articles of current interest, and reviews of books and films. It is aimed at those caring for the mentally ill, the aged and the mentally defective.

Journal of psychiatric nursing and mental health services. 1963– Charles B. Slack, Inc., 6900 Grove Road, Thorofare, N.J. 08086.

Published: Bimonthly.

Content: Original articles on nursing problems, programs, roles; International trends; Psychiatric drugs; Geriatrics.

Mental health digest. 1969– National Clearinghouse for Mental Health Information, NIMH, 5600 Fishers Lane, Rockville, Md. 20852.

Published: Monthly.

Content: Contains condensed journal articles, but does not give a bibliography for the journal article. The aim is to present "a broad sampling of scientific subject matter and points of view."

Mental hygiene. 1917– National Association for Mental Health, 10 Columbus Avenue, New York, N.Y. 10019.

Published: Quarterly.

Content: Contains articles concerned with all aspects of prevention and treatment of mental illness, and the promotion of mental health. Also lists publications of the National Association for Mental Health.

Psychiatry digest. 1954– Psychiatry Digest, Inc., 445 Central Avenue, Northfield, Ill. 60093.

Published: Monthly.

Content: Gives short summaries of articles and psychological and psychiatric journals. Book reviews are listed separately.

Psychiatric news. American Psychiatric Association, 1700 18th Street N.W., Washington, D.C. 20009.

Published: Twice monthly. Official newspaper of the American Psychiatric Association.

Content: News, current events, special reports, job opportunities.

Psychiatric progress. 1966– Eli Lilly & Co., 3 West 57th Street, New York, N.Y. 10019.

Published: Bimonthly.

Content: Contains current news and views in psychiatry in a newspaper format.

Roche report: frontiers of psychiatry. Roche Laboratories, Division of Hoffman-LaRoche, Inc., Nutley, N.Y. 07110.

Published: Periodically. May be obtained without charge.

Content: Current topics of interest; looseleaf format.

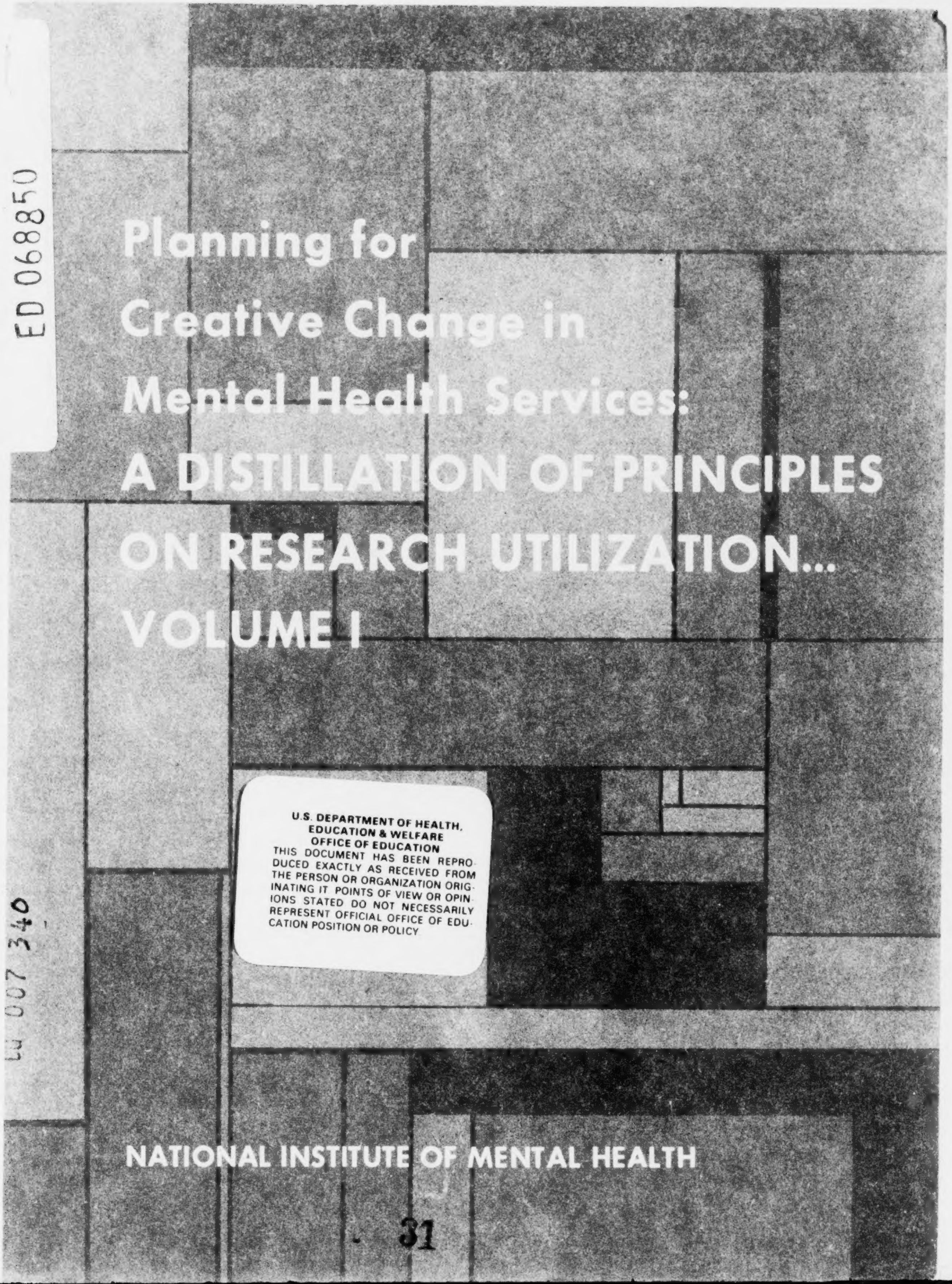
Schizophrenia bulletin. 1969– Office of Communications, NIMH, 5600 Fishers Lane Rockville, Md. 20852.

Published: Quarterly

Content: "A synthesis of the diverse and scattered efforts being made toward understanding schizophrenia." Each issue focuses on a major theme in the field. Selective bibliography and abstracts; drug trial studies omitted.

☆U.S. GOVERNMENT PRINTING OFFICE: 1972 429 678

ED 068850



Planning for Creative Change in Mental Health Services:

A DISTILLATION OF PRINCIPLES ON RESEARCH UTILIZATION...

VOLUME I

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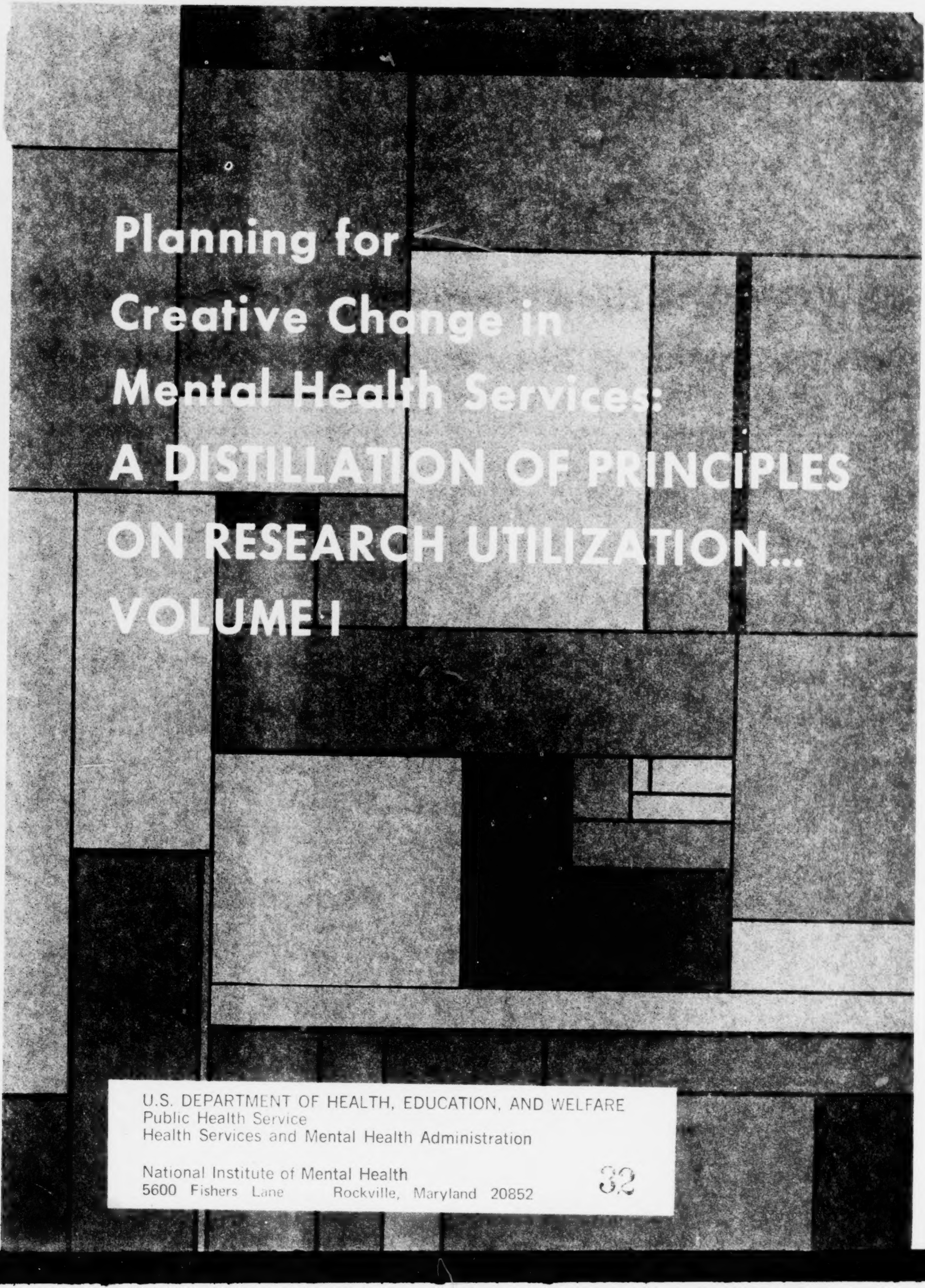

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Services and Mental Health Administration

National Institute of Mental Health
5600 Fishers Lane Rockville, Maryland 20852

32

DHEW Publication No. (HSM) 71-9060

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $2. Stock Number 1724-0145

TABLE OF CONTENTS

Page

Preface v

PART ONE From Research to Practice: A Distillation of Findings and Principles 1

I. The Problem of Research Utilization 3

II. Some Factors Which Condition Innovation 7

III. Ways of Improving the Linkage 17

IV. Facilitating Organizational Change 25

PART TWO Summaries 33

PREFACE

Distillation of Principles on Research Utilization . . . Volume I is one of a series of Institute publications on mental health services research and development. The purpose of the series is to offer assistance to persons working toward continually increased effectiveness of delivering mental health contributions to people in need.

Reflected in all publications in the series is a three-phase process of services improvement through planning for creative change:

(1) Identification of problems and needs for change in services.

Use of Program Evaluation is one publication aimed toward the improvement of formal approaches in frontline facilities to help determine when change is—or is not—needed.

(2) Search and research to provide direction for effective change to solve problems and meet needs.

The publication, *Innovations and Current Conclusions*, issued several times each year, is to highlight innovative techniques. *Information Sources and How To Use Them* is offered as an aid to mental health workers seeking new knowledge through all relevant literature. A section of the *Manual on Research Utilization* has been addressed to those planning original research on innovative mental health services delivery techniques.

(3) Promotion of the diffusion and adoption of innovations through planned change.

Out of recognition that the dissemination of knowledge alone ushers little change, sections of the *Manual on Research Utilization* have been devoted to techniques of planned change, addressed to consultants and administrators/practitioners. For persons wishing to become more thoroughly familiar with the utilization of knowledge in planned change, this *Distillation of Principles on Research Utilization . . . Volume I* is offered. With the hope that it will foster continued investigations in refined techniques of change through knowledge utilization, *An Annotated Bibliography on Research Utilization . . . Volume II* has been issued as a part of this series.

This distillation, together with selected summaries of articles and books dealing with research utilization, is a product of Contract No. 42-69-1, National Institute of Mental Health, awarded to the Human Interaction Research Institute. Deep gratitude is extended to Dr. Edward M. Glaser and his HIRI staff and consultants, Barbara Bird, Kathalee Garrison, Edward Glaser,

Molly Lewin, John Marks, Michael McKee, Lynne Svenning, Goodwin Watson and C. Gilbert Wrenn, for their comprehensive assessment, selection, summarizing, and logically ordering of the research utilization literature. Mrs. Irma S. Lann, head of the NIMH Research Implementation Section, initiated the literature review. Very special thanks are due her for her excellent work as project officer throughout the duration of the contract.

Howard R. Davis, Ph. D.,
Chief, Mental Health Services Development Branch,
Division of Special Mental Health Programs.

PART ONE

FROM RESEARCH TO PRACTICE: A DISTILLATION OF FINDINGS AND PRINCIPLES

I. The Problem of Research Utilization 3
II. Some Factors which Condition Innovation 17
III. Ways of Improving the Linkage 25
IV. Facilitating Organizational Change 33

I. THE PROBLEM OF RESEARCH UTILIZATION

A. There Is a Long Timelag Between Research Findings and Corresponding Changes in Practice

> All over the world people struggle with problems and seek solutions. Often those who struggle are unaware that others face similar problems, and, in some instances, are solving them. It is destructive and wasteful that people should be frustrated and often defeated by difficulties for which somebody else has found a remedy * * *. The gap between what we know and what we put to effective use bedevils many fields of human activity—science, teaching, busines management, and organizations which provide health and welfare services.
>
> (Glaser and Marks, 1966)

There is abundant evidence demonstrating the lag between conception of a "desirable" new practice and its widespread adoption or adaptation. McClelland (1968) reminds us of the slow acceptance of kindergartens over half a century, and reports that experience with the Army utilization of research and development (R. & D) indicates the range of time from completion of research to implementation ranges from a few weeks to over 10 years. Mort and Cornell (1941) estimated that it took educational innovations about 15 years after the first practical demonstrations to reach the most progressive schools, followed by 20 years of fairly rapid spread and 15 more years to reach the slow adopters.

An exception to the long-lag syndrome may be invention and introduction of technological devices which can be sold at a profit. Carter (1968) found that about 90 percent of instances of change in one study (Department of Defense) represented development of *technology* rather than application of *scientific* research.

B. New Knowledge Often Does Not Reach Practitioners

Many research findings which could improve practice are virtually unknown to the professionals because these findings never see the light of day. Halpert (1966) has observed that "innovators frequently do not write up their findings." Glaser (1968) inventoried major treament programs for chronic obstructive pulmonary disease and found that many in current use had never been described in publications. Sometimes innovators, as they struggle to cope with difficult situations, are actually unaware that they have introduced a noteworthy innovation. Often in such cases, no one ever reports the new design (Manela, 1969). In other cases, the research investigator is concerned with getting on to the next phase of his work and often begrudges the time required to write up what he has finished doing (Archibald, 1968; Bassett, Davison and Hopson, 1968). Researchers often have files and boxes of data which they have used only to get tentative answers to their own urgent questions and have then pushed aside to be analyzed and written up at some more convenient season which may never arrive (Kaplan, 1958).

In the field of education it has been found that: "A great proportion of the significant new inventions * * * remain quite invisible, undocumented, inaccessible for consideration by potential adopters." (Lippitt, 1965). When nine teachers were given special stimulation and aid in developing classroom innovations, all of them introduced changes in their own classrooms, but few of these new procedures were adopted by, or even known to other teachers in the system (Fox and Lippitt, 1964). A study of reading texts used to teach elementary school children showed that few of the findings from a generation of very active research into the learning and teaching of reading had been incorporated into these tools for instruction (Barton and Wilder, 1964).

One aspect of the lag between research and its application is the logjam which exists in the formal communication system; i.e., the flow of information through the professional journals. The process between the generation of a research development and its appearance in professional journals and abstracts can consume months or even years (Garvey and Griffith, 1967; Kaplan, 1958). In the field of psychology, for example, Garvey and Griffith (1967) found roughly a 9-month delay between submission of a journal article and its publication. Moreover, considerable time may elapse between the completion of a study and development of a manuscript for journal publication. Once submitted, the scarcity of journal space often results in rejection of the article (Kaplan, 1958).

The publication of research findings does not necessarily result in the widespread utilization of these findings by practitioners. It is estimated that half the articles in "core" scientific journals are each read by no more than 200 persons, although distribution of preprints and reprints augments this total exposure (Garvey and Griffith, 1946a). Monographs, like books, usually attract the more academic reader and have a limited distribution. Thus, the potential for dissemination of new knowledge through the professional literature appears limited due to the relatively small size of the audience in proportion to the actual number of practitioners.

Dissemination to practitioners is further hindered by the fact that research reports are usually read and used by other researchers; seldom by practitioners (Havelock, 1969b). Roberts and Larsen (1971) report that few mental health practitioners make any large-scale and systematic effort to uncover research results which could serve as a basis for change; instead they rely heavily on contact with colleagues to stimulate innovation. Further, most innovations which are adopted emerge from the work experience of practitioners rather than from research results. Practitioners tend to be "doers" and not "readers"; hence, they tend to rely more on oral communication than on publications (Halpert, 1966; Paisley, 1968). This difference in information-seeking behavior between researchers and practitioners leads us into another major dimension of the research utilization problem.

C. Research Scientists and Practitioners Think Differently

Karl Marx's aphorism, "Life determines consciousness" has been rephrased by Harold Laski, as "Men who live differently think differently." Researchers and practitioners, especially in the social sciences, seem to inhabit two very different professional "worlds." An investigator seeking truth has a different set of values, problems, norms, and reference groups from those of a practitioner seeking to help clients. This point has been made by numerous analysts of the lag between research and practice (Cohen, 1959; Guetzkow, 1959; Dexter, 1965; Schoenfeld, 1965; Marquis and Allen, 1966; Barbichon, 1968; Rubin, 1968; Joint Commission on Mental Illness and Mental Health, 1961). The extent of the distance between the worlds of research and practice is reflected in one author's description of these areas as "two solitudes" (Joly, 1967).

The differences between researchers and practitioners represent potential areas of conflict between the two. Rodman and Kolodny (1954) describe the research investigator as logical; the practitioner as intuitive. Nagi (1965) contrasts the statistical skills of the research scientist with the clinical skills of the practitioner. Research attempts to discover common patterns in a population; the clinician views each case as unique. The scientist can live indefinitely with the tentative and hypothetical; the administrator wants to act with confidence. As pointed out by Likert and Lippitt (1953), the research worker asks his questions in the form of "Why?" while the practitioner wants to know "How?"

Similarly, the manager or operator tends to seek a prescription—what to do (Glock, 1961). Careful tests of credibility are commonly used in research, less applied by practitioners (Flangan, 1961). It seems that the practitioner, in order to improve his service, is likely to interpret and apply research findings beyond their limits of reliability and validity; then he may be disappointed and disillusioned.

Practitioners tend to rely on precedent, commonsense, and intuition much more than they do on research findings (Pellegrin, 1965; Rose and Esser, 1960). The effects of this lack of appreciation for and understanding of the value of research are defined by one author who describes a vicious circle existing in the field of education: "(*a*) Many educators do not conceive of the scientific method and research as being of primary significance to their work; (*b*) this state of mind creates an atmosphere in which low priority is given to the conduct or utilization of research; (*c*) because of low evaluation and neglect, research continues to be a dubious enterprise; and (*d*) because condition (*c*) exists, condition (*a*) is perpetuated." (Pellegrin, 1965.)

The audience for whom the research scientist primarily speaks and writes is made up of the prestige leaders in his discipline or subdiscipline (U.S. Department of Health, Education, and Welfare, "Research utilization in aging: an exploration," 1963; Bassett, Davison, and Hopson, 1968; Rosenblatt, 1968). His elliptical and technical jargon demonstrates his competence to his colleagues; at the same time, this style baffles and annoys the practical operator (Halpert, 1966; Glaser, 1966). One study showed social work professionals especially irked by the statistical procedures which are clearly valued by the research fraternity (Joly, 1967).

Another example of the contrast in viewpoints arises when the behavioral scientist tries to set up "control groups." He soon discovers that agencies and situations vary in so many dimensions that to control all but one factor would mean to fetter and cripple normal operations. Managers understandably resist such imposition (Nagi, 1965). The same kind of problem arises in attempts to replicate a social experiment (Manela, 1969). It is usually impossible to find a second setting which is enough like the original to warrant the expectation that the changes just like those found in the first project should appear also in the attempted replication. Scientists seek rigor; managers must be realistic.

The most regrettable outcome of this difference in viewpoint is that the problems attacked in most research studies appear trivial to most managers of human welfare (Rosenblatt, 1968), while attempts to interpret and to apply significant research conclusions in realistic social settings are viewed by most "pure" scientists as mere vulgar popularizations (Archibald, 1968; National Science Foundation, "Knowledge into action," 1969). The general tendency of each side to stereotype, to belittle and to reject the work of the other leads to avoidance and/or overt hostility (Schmuck, 1968). The problem is intensified when individuals feel personally inadequate to cope with the latest concepts of an ever-advancing frontier of behavioral science, be they communicating with practitioners, or utilizing research findings (Cohen, 1959; Rosenblatt, 1968).

These differences in the philosophies of the laboratory and the service agency are transcended at times. Some research is communicated and used. The following chapter presents some ways and means of improving the linkage between research and practice.

II. SOME FACTORS WHICH CONDITION INNOVATION

A. Characteristics of the Innovation Affect the Probability of Its Adoption

1. Relevance

An innovation which offers promise for achieving desired results in dealing with a persistent and sharply vexing problem of concern to a great many people is more likely to spark interest than one which either is not of general concern or pertains only to a relatively small number of potential beneficiaries (Miles, 1964a; Glaser and Taylor, 1969).

2. Compatibility

Innovations are more acceptable if they seem compatible with the user's previously established values, norms, procedures, and facilities (Rogers, 1962; Katz, 1963; Miles, 1964a; Niehoff, 1966; McClelland, 1968). A new drug "fits in" easily with customary medical practice; the use of subprofessional staff is another matter. Relatedly, a potential adopter's main occupational interest seems to have a "halo" effect in contributing to rapid adoption of innovations most closely allied to that interest (Fliegel and Kivlin, 1966).

Compatibility appears to be an important variable in the adoption of innovations in the field of mental health. For example, one study which surveyed practicing psychiatrists found very little impact of recent developments in neurophysiological research upon private practice although the psychiatrists were generally aware of these recent developments. This finding was attributed to the fact that the theoretical framework of the psychiatrists (psychodynamic) was not compatible with the theoretical assumptions on which the research was based (Rose and Esser, 1960).

3. Relative Advantage

Innovations that appear to potential adopters to have relative advantage over existing practices, especially when espoused by highly respected opinion leaders, are more readily adopted (Barnet, 1953; Hovland, Janis and Kelly, 1953; Rogers, 1962; Bright, 1964; Coleman, Katz, and Menzel, 1966). A certain change in factory machinery might be an improvement, but one which would be worth less than it would cost to introduce; thus it would have no relative advantage.

Changes which are inexpensive and can be accomplished with already available materials, persons and skills can be quickly introduced. Those which require large investments of money, time, and energy will necessarily come more slowly (Miles, 1964a).

Innovations in the social services may be hindered in this respect since their relative advantage is often difficult to assess (Rogers, 1969). "Advantage" includes factors other than financial: an innovation may also have consequences for prestige, convenience, and satisfaction that are perceived as advantageous by the adopted. Bowman (1959), analyzing the motivation for community action in mental health, discovered that sometimes the beneficial "side effects" became important enough to obscure the original goals. For example, the allowance for "overhead" in a research grant may be more important in the mind of an administrator than the ostensible purpose of the research.

4. Observability or Communicability

Innovations also differ in the extent to which rewards are observable. The more obvious and tangible the gains, the greater the probability of adoption (Flanagan, 1961; Mansfield, 1963; Glaser and Taylor, 1969). Rogers refers to this as communicability (1962, 1967). When people can see the results of using a new idea, they are more apt to adopt. Hence, nonmaterial ideas diffuse more slowly than material innovations.

5. Complexity and Feasibility

Other things being equal, a change which is easy to understand and to implement is more likely to be adopted than one which is complex and difficult to learn or put into operation. Replication requires feasibility for transfer to other settings. (Rogers, 1967; Rogers and Svenning, 1969.)

6. Reversibility

The extent to which a proposed change is known to be reversible if it does not prove desirable may affect its adoption. Not all innovations can be discarded later with impunity. The bridges back to the *status quo ante* may have been burned. Situations in which the user need not "play for keeps" provide more opportunity for innovation (Lippitt and Havelock, 1968; Miles, 1964b).

7. Divisibility

If a proposed change is divisible, so that it can be introduced one step at a time, with opportunity to assimilate each stage before the next comes on, it will arouse less resistance than would more wholesale change (Rogers, 1962; Fliegel and Kivlin, 1966).

8. Trialability

A related distinction is that between changes which: (*a*) Can be tried on a pilot basis in a few situations, and (*b*) those which make an all-or-none demand on the entire system. This characteristic, sometimes called "trialibility," reduces the perceived risk of an innovation and lessens resistance (Rogers and Svenning, 1969; Bright, 1964).

9. Credibility

If an innovation is espoused by an eminent, highly respected person or group, at least its initial acceptance is more likely than if the same innovation were espoused by a less eminent person or group. For example, when Linus Pauling, Nobel prizewinner in biochemistry, published "Vitamin C and the Common Cold" in January 1971, there was a mass surge toward "instant adoption" (at least at the time, or for a tryout). Drugstore shelf stocks of vitamin C tended to be sold out across the country within a few days. Enhanced credibility afforded by Dr. Pauling's status was, to be sure, aided by other factors such as relevance to a common, bothersome problem; simplicity; trialability; etc. To some extent, this aspect of credibility may be considered as a part of relative advantage. Another aspect of credibility stems from the soundness of the research design. This includes adequacy or representativeness of sampling from which generalizations are drawn, appropriateness of statistical methods, and the cogency of assessment or analysis of the data.

B. Characteristics of an Organization Affect the Probability of Innovation Within It

The likelihood of successful innovation depends largely on the extent to which an organization is adaptable to change. Thus, organizational variables themselves are often most influential in determining utilization of research (Kogan, 1963).

1. Organizational Climate

An organizational climate which supports the concept of change and rewards new ideas is conducive to successful innovation. Marcum (1968), for example, compared the organizational climates of high- and low-innovating schools and found that the schools involved in innovating showed more open climates. Numerous others affirm and confirm this principle (McGregor, 1960; Likert, 1961; Costello and Zalkind, 1963; Miles, 1964; Likert, 1965; Schein and Bennis, 1965; Schoenfeld, 1965; Watson and Glaser, 1965; Bennis, 1966; Glaser, 1966; Julian, 1966; Cawleti, 1967; Chesler and Fox, 1967; Greiner, 1967; Watson, 1967; Schmuck, 1968; Glaser and Taylor, 1969).

Several features of an organizational climate conducive to change may be identified:

(*a*) *Communication.*—An essential ingredient of a healthy climate for change is free communication, of both a formal and informal nature, flowing up and down hierarchical lines and horizontally among colleagues (Costello and Zalkind, 1963; Dykens, et al., 1964; Miles, 1965; Becker and Stafford, 1967; Chesler and Fox, 1967; Evan and Black, 1967; Marcum, 1968). Dykens, et al. (1964), while advocating the importance of informal channels of communication, point out that a system of informal exchanges among staff is probably *by itself* unlikely in any systematic or important way to either generate change or compel interest in change; nor, they maintain, is it by itself likely to encourage creativity in thinking about long-range, complex, and demanding goals. Informality would seem to be adaptive rather than stimulating. Lippitt, et al (1967) mention a variable related to communication which may be critical: organizational norms must support asking for and giving help. Thus, not only is the quantity, form, and direction of communication important, but the content must relate to the desired goals of problem solving in order for the organizational climate to be conducive to change.

(*b*) *Administrative and colleague support.*—An administrative system of rewards or sanctions that motivate problem-solving efforts should exist, point out Costello and Zalkind (1963), who describe the administrator as a reinforcement agent. They state that positive reinforcement of correct responses is essential and recommend that the administrator place emphasis on intrinsic reinforcements such as salary and fringe benefits. Lippitt et al. (1966) found that teachers who perceive a principal as supporting innovation did, in fact, innovate more often. That perception of administrative support is related to supportive activity (not just words) is also suggested by this same study which found that more than one-third of the teachers who viewed the principal as bringing educational literature to their attention adopted new practices, while those who viewed him as never bringing such literature to their attention did not adopt new classroom practices.

The attitude of colleagues toward change can exert a strong force that inhibits or facilitates innovativeness within an organization. Chesler and Fox (1967), for example, point out that new teachers in a system, fresh from college or advanced training, may enter a school eager to try new ways only to be blocked by an established culture dominated by older teachers who do not welcome the suggestions. Lippitt, et al. (1966) found that teachers who perceived colleague support in adoption efforts were more likely themselves to be adopters of new practices.

(*c*) *Participation in decisionmaking.*—Extensive participation by all persons concerned in the identification and solution of organizational problems is conducive to change (Watson and Glaser, 1965; Chesler and Fox, 1967; Aiken and Hage, 1968; Glaser and Ross, 1971). On the other hand, rigid, authoritarian structures and coercive controls reduce trust and retard innovation. Forced or authoritative decisions are more likely to be circumvented and/or discontinued; group decisionmaking is a longer process, but is more likely to result in lasting change (Rogers, 1967). Coch and French (1948) conducted a classic experiment on this thesis which involved the introduction of a changed product in a textile factory. Later replication supported the conclusion that the greater the involvement of workers in planning the coming change, the better their acceptance of it (French, 1960; Marrow, 1969).

Dykens, et al. (1964) in a study of strategies of mental health change conclude that mutual participation in change efforts may lead to positive and constructive feelings and can further enthusiasm for change.

(*d*) *Staff morale.*—Several studies relate high staff morale to organizational innovativeness (Miles, 1965; Chesler and Fox, 1967; Aiken and Hage, 1968; Marcum, 1968; Glaser and Ross, 1971). Actually, high morale would appear to be another effect of the same factors noted above which facilitate organizational innovativeness. Level of staff morale, then, might serve as a good indicator of organizational climate.

(*e*) *Time.*—A final factor related to organizational environment, is whether or not the organization allows staff sufficient time for problem-solving and change-related activities. In order to create an organizational climate conducive to innovation and change, staff must have some time free from the pressures of routine in which to engage in communication, problem solving, or pursuit of research input (Costello and Zalkind, 1963; Dykens, et al., 1964; Lippitt, et al., 1967; Marcum, 1968).

2. Organizational Goals

In a healthy organization, the goals of the system are reasonably clear to the system members and reasonably well accepted by them. Goals must also be achievable with existing or available resources, and must be appropriate (Miles, 1965). The ambiguity and diffuseness of educational goals, for example, diminishes the effectiveness of educational organizations and impedes institutional change (Halpin, 1962; Miles, 1965; Sieber, 1968). Two effects of goal diffuseness in relation to education are identified by Sieber (1968): (1) This diffuseness reinforces the effects of status insecurity and vulnerability on innovation; (2) difficulties in measuring the attainment of goals makes it hard to reach consensus regarding the efficacy of particular skills.

In terms of the appropriateness of organizational goals, Rogers (1967) raises an interesting point about how the "closure" orientation of vocational rehabilitation agencies serves to divert attention from consideration of innovative ideas. An emphasis on the quantity of closed cases rather than the quality of services rendered leaves counselors with little time to "fool around" with research results, and also supports a focus on short-range goals, while gains from innovations are likely to appear on a long-range basis.

Written statements of organizational goals and proximate targets have been found helpful in reducing anxiety about change and in imparting a sense of security during the introduction of new procedures (Watson and Glaser, 1965; Wiles, 1965; Fairweather, 1967; Howard, 1967; Bobbe and Schaffer, 1968; Schmuck, 1968).

In contrast to written goals, sharply defined job descriptions have been found to characterize organizations which are reluctant to innovate (Aiken and Hage, 1968). The two observations combine readily in the idea that the best work is done when everyone shares the objectives, but each is relatively free to do his share of the common task in his own preferred way.

When an organization such as a rehabilitation agency can: (*a*) Hammer out its own optimal program outcomes, (*b*) set up process or time dimensions for instituting *agreed upon* specific controls related to those optimal program outcomes, (*c*) measure performance, (*d*) provide timely feedback, and (*e*) offer rewards for superior performance, the agency then has an input-process-output frame or reference which provides a system of accountability. This is likely to result in significantly improved cost-benefits (Walker and Kiel, 1970).

3. Organizational Structure

Power and status distribution within the organization affect its ability to innovate (Lippitt, Watson, and Westley, 1958; Miles, 1964b). The organization may be too centralized, or too diffuse, or spotty. The literature, however, is less than conclusive regarding this variable. Chesler and Fox (1967), for example, urge the decentralization of administrative decisionmaking in educational institutions in order to accommodate greater participation by staff. Similarly, both Rogers (1967) and Havelock (1969) indicate that a highly developed organizational hierarchy impedes communication necessary for diffusion. Griffiths forthrightly states that: "* * * the more hierarchical the structure of an organization, the less the possibility of change" (1964, p. 434). On the other hand, Sapolsky (1967) concludes that the decentralized structure of the department store may serve as a major barrier to the institution of change. When interunit communication is good in such an organization, it allows for mobilization of forces against the tactics used to reduce resistance. Still another study reported that teachers in schools with a diffuse social structure *innovated* more, while those in a hierarchical structure *adopted* more (Lippitt, et al., 1967).

Thompson (1965 and 1969) makes the point that bureaucratic organizations are intrinsically resistant to innovation because they are monocratic, stress conformity rather than creativity, and are conservative in orientation. He believes that the bureaucratic structure is slowly evolving in the direction of greater flexibility. He suggests that this trend toward flexibility could be accelerated by looser structure, freer communications, decentralization, greater reliance on group processes, and modification of the incentive system (stressing the internal rewards of gratification rather than such external rewards as upward movement in the hierarchy).

Another factor of the organizational structure that appears related to innovation is that of occupational specialization. A study of vocational rehabilitation agencies, for example, determined that there was a high positive correlation between the rate of acceptance and implementation of new programs and the number of occupational specialties within the organization (Aiken and Hage, 1968). Moreover, the number of occupational specialities was one of the best predictors of future program innovation. Similarly, a study of medical schools found that innovative schools had a larger number of departments in the basic sciences and clinical areas (Carrole, 1967). According to these studies, such intraorganizational diversity appears to foster creative exchange among staff. Contrariwise, however, Havelock (1969) considers division of labor (specialization) to impede communication between organizational subunits in three ways: It fosters the formation of unique coding schemes, it stimulates interunit competition, and it encourages the formation of separate and incompatible group norms. A key factor in determining the effects of specialization might be that of the extent to which specialized organizational subunits are autonomous or interdependent. Thus, the Carrole (1967) study found that the innovative medical schools reflected a lessening of the traditional departmental autonomy. The fading of departmental autonomy was attributed to shift from the allocation of funds to departments to allocation to the broader school unit. Similarly, the agencies in the Aiken and Hage (1968) study that had a high number of different occupational specialties and were the most innovative were also those most likely to have many cooperative relationships with other agencies, which might suggest that the focus of staff was on professional or organizational goals rather than departmental self-interests. In a later study (1970) these authors pointed out that organizational complexity and emphasis on job satisfaction were positively correlated with a *high* rate of change; centralization, formalization, stratification, and concern with volume production and efficiency were positively correlated with a *low* rate of change.

A characteristic related to organizational structure is the concept of organizational self-renewal, or the organization's adaptability to our rapidly moving world of constant changes. The concept of self-renewing institutions builds on the idea of pluralism; each such organization is "characterized by variety, alternatives, choice, and multiple foci of power and initiative" (Gardner, 1964).

Self-renewing organizations provide structures for sensing internal and external changes which call for creation of new procedures (Watson, 1967). Miles (1965) identifies a similar characteristic as a dimension of the healthy organization which he terms "problem-solving adequacy." This includes structures and procedures for detecting problems, inventing possible solutions, choosing solutions, implementing them and evaluating their effectiveness. This may take the form of an office for research and development, a setup for problem sensing, such as an ombudsman, or interview survey, or a regular consultant service. The absence is an agency of any unit which is designed especially to detect internal trouble before it becomes serious, and external trends before they become generally evident, makes it unlikely that the organization will succeed in continuous self-renewal. It can only alternate between costly lag and overdue spurts of reorganization.

If there is a sensing unit to report emerging needs for change, the critical question then becomes the relationship of this intelligence service to the responsible decisionmakers who are the gatekeepers of innovation (Glock, 1961; Paisley, 1968). If the gatekeepers of innovation (often top management of the organization) truly provide a nondefensive climate which encourages and rewards challenge from within, and at all levels, then essentially all members of the organization are encouraged to become sensing units, and further, to participate in developing responses to identified problems or needs (Glaser, 1969).

In a study in which the focus was explicitly the mental health service delivery agency, Glaser and Ross (1971) formulated a set of operating conditions which would provide an organizational vehicle for effecting change: Carrying out periodic reviews of agency mission, assessing program effectiveness, disseminating knowledge about alternative practices, providing opportunity for advocacy, providing a means for making decisions, providing a way of sustaining commitment, having control over sufficient resources. These conditions can be considered functions of organizational climate and goals as well as structure.

4. Organizational Size

In spite of the popularly held assumption that larger organizations are slow and cumbersome in changing, evidence indicates that more change actually takes place in larger organizations. For example, Carrole (1967) found that larger medical schools were more innovative. Mansfield (1963), in a study of 294 industrial firms, found that when profitability was held constant, the chances were good that a large firm would be quicker to use a new technique than a small firm. In a later study (1968), he suggests that the largest organizations will do a disproportionately large share of the innovating under the following conditions: (*a*) When the investment required to innovate is large relative to the size of the organizations that could use the innovation; (*b*) when the minimum size of the organization required to use the innovation is large relative to the average size of similar organizations; and (*c*) when the average size of the largest organizations is much greater than the average size of all potential users of the innovation.

5. Organization Affluence and Capacity

Generally it would seem logical that the more successful, internally secure, and financially prosperous organization would be in a better position to risk innovation. Havelock (1969a) refers to this as a "capacity factor." Several studies have related organizational affluence to innovativeness (Mort, 1941; Watson, 1946; Richland, 1965; McClelland, 1968). The findings of Mansfield's (1963) extensive empirical investigation of industrial firms, however, cast serious doubt on the certainty of this relationship. In his study of 294 organizations, it was found that a firm's financial health as measured by profitability, liquidity, and growth rate, bears no close relationship to how long it waits before introducing a new technique (1963). Havelock (1969a) makes note of this ambiguity in the findings related to the variable of organizational affluence and makes the following suggestion:

> It seems reasonable to suppose that two conflicting forces in organizational dynamics are operating against each other to produce these confusing results. On the one hand we have the complacency factor * * * as an "inhibitor" when organizations see themselves as functioning at a high level already. The other is the "risk capital" factor which also comes into play as a force *for* innovation when organizations are functioning at a high level. Which of these opposing forces is dominant in a given situation probably is determined by additional factors such as attitude and structure * * *

6. Characteristics of Organization Leadership

Mansfield (1963, 1968), after extensive studies of innovation among industrial firms, suggests that, "the personality attributes, interests, training, and other characteristics of top and middle management may play a very important role in determining how quickly a firm introduces an innovation." Havelock (1969a) also states that leadership qualities may be important to knowledge dissemination and utilization.

Although the characteristics of organizational leaders appear to significantly influence organizational innovation, it is perhaps erroneous to regard the "innovativeness" of an official as only a matter of his own personal traits. He occupies a certain position in a system, and is expected to act the corresponding role (Watson, 1966; Sieber, 1968). He is subject to sanctions for unacceptable deviations. He is required to be a functionary. Carter (1968) observes that all too often the "gatekeeper" of change in educational and other social institutions is politically rather than professionally oriented. That he must be alert to shifting pressures, but not necessarily to research findings, would seem to follow.

7. Professionalism of Staff

The characteristic of staff professionalism appears to be positively related to organizational innovativeness. To illustrate, a survey of a sample of the most and least innovative schools from five States found that the most innovative showed the larger number of professional staff (Marcum, 1968). Rogers (1967) relates that the professionalism of potential adopters is an important influence on diffusion of innovation. An interesting twist is suggested by a study of organizational factors affecting the success of innovative staff proposals submitted to line management in business organizations. Among the characteristics of organizations in which proposals were more likely to be successful were: (*a*)

A higher degree of professionalization of staff personnel, and (*b*) a lower degree of professionalization of management (Evan and Black, 1967).

Havelock (1969a) indicates that the main effect of professionalism of staff is the entry or input of new knowledge into the organization. Further support for this idea is provided by Aiken and Hage (1968). These investigators found that the amount of extra-organizational professional activity was highly and positively correlated with organizational rate of new program implementation. Amount of professional training, in itself, however, did not appear significantly associated with rate of innovation.

Those aspects of professionalism which relate to individual behavior, will be discussed in a later section.

8. Relationship of Organization to Social Environment

Organizations are seldom, if ever, wholly autonomous. They operate within a context of customers or clients, communities, governmental controls, and public opinion. The way in which an organization perceives its relationship to its larger social context is an important determinant of the kinds of change it wants or can accept (Lippitt, Watson, Westley, 1958). Each social agency must protect ties to a supporting population and a client population. These relationships set limits beyond which the institution cannot go and survive. The perception of the limits may, however, be inaccurate. One service of a change-agent is sometimes to investigate the validity of the perceived limits. The late Prof. William H. Kilpatrick used to tell teachers: "You have more leeway than you suppose."

Organizations differ in their vulnerability to pressures from environmental forces. Vulnerability may be defined as the degree to which an organization is subject to powerful influences from its environment irrespective of organizational goals and resources (Sieber, 1968). For example, health agencies dependent on voluntary local support must be concerned with public opinion and politics more than are agencies privately endowed or nationally financed. A good example of the effects of organizational vulnerability is provided by Sieber (1968) who identifies the following implications for innovation of the vulnerability of school systems: (*a*) Changes in practice that might disturb the local community are shunned; (*b*) the adoption of innovation often depends more upon political feasibility than educational value; (*c*) innovations receiving wide publicity through the mass media become candidates for adoption, irrespective of their educational value; and (*d*) internal relationships of a vulnerable system may be affected so as to reduce serious experimentation.

It is interesting to consider the factor of organizational vulnerability in relation to that of autonomy; autonomy has been identified as a major dimension of a healthy organization (Miles, 1965). Accordingly, the healthy organization has a sense of independence from the environment (Miles, 1965). Thus, vulnerability would appear to be in direct opposition to organizational autonomy, and hence to organizational health.

The characteristics of the community served by an organization affect its ability to innovate (Havelock, 1970). Not infrequently the leaders of a school or a church or other social agency outrun the tolerance of the constituency and they are then reprimanded, constrained, or discharged (Ross, 1958).

Organizations which pursue objectives which are controversial in the larger setting have a conflict between their goals and their desire to be accepted in the community. A study of local affiliates of planned parenthood concluded that those units which were most concerned with keeping on good terms with other community agencies were less productive in achieving the objectives of planned parenthood. A degree of independence in pursuing the organization's own targets was more salutory (Rein, 1964).

Some organizations (some persons and teams within the same organization) are oriented primarily toward output and reception of this product by clients (Manela, 1969). Others attend mainly to the internal operations and bureaucratic functioning. Those persons, sections, and institutions which, by choice or by necessity, attend carefully to the market are apt to be more responsive to the need for change. The more the individual, bureau, or agency is wrapped up in its own machinery and operations, the less likely they will be to innovate.

9. Other Factors

Several factors, in addition to those discussed above, appear in the literature related to innovating organizations:

(*a*) *Organizational, or staff, cohesiveness* appears positively related to innovative organizations (Miles, 1965). Like high staff morale, this characteristic would seem to be a product of a positive organizational climate.

(*b*) *Physical and social distance* between members and subunits of an organization and between sources of innovation and potential adopters impedes innovation and diffusion (Lippitt, et al., 1967; Rogers, 1967; Havelock, 1969a).

(*c*) *Enduring patterns of satisfying social relationships among staff* operates against change and is characteristic of a "closed" organizational climate (Aiken and Hage, 1968; Marcum, 1968).

(*d*) *Tenure of the chief administrator* is inversely proportional to the number of innovations in an organization (Griffiths, 1964). Stated differently, new leadership results in new ideas and change. The most change is likely when new leadership comes from outside the system (Griffiths, 1964; Carlson, 1968).

(*e*) *Antecedent innovations.*—Organizations in which there have been changes are more open to further change (Bright). This seems particularly true when subsequent innovations are closely related to those preceding (Sapolsky, 1967). Innovations seem to come in clusters (Little, 1963). On the other hand Mansfield (1963) found that a firm that is a leader in introducing one innovation may be slow to introduce the next. Thus, an organization's willingness to change or to innovate may be related to the length of time since the last major effort.

(*f*) *Organizational inertia* (or sclerosis) is the the characteristic that has given large organizations a "bad name" with regard to organizational size and innovation. Actually, organizational inertia, which might be described as institutional hardening of the arteries, appears to be largely a function of the age of the organization and failure to deliberately encourage a spirit of self-renewing challenge from its own staff and from those it serves. Large institutions appear most susceptible to this condition. Over a period of time, procedures, regulations, activities, and attitudes become routine, habitual, and cemented (Havelock, 1969a; Glaser, 1965).

(*g*) *Strong vested interest* at various possible levels of the organization in preserving the status quo method of operation, whether for psychological, economic, ideological, political, or other reasons * * * obviously can constitute powerful barriers to the introduction of change (Watson and Glaser, 1965; Glaser and Ross, 1971).

C. Characteristics of the Individual Affect His Response to Innovation

1. Age

Several studies (e.g., Rogers, 1962) report that younger people are more attracted by innovation than are their elders. The stereotype of senior citizens is that they believe in the good old days. Marcum (1968) found younger educators in the more innovative schools; Lippitt, et al. (1967), however, report more response to innovative proposals from older as well as younger teachers, with the middle range most tradition minded.

2. Economic Status

Comparable to the "capacity factor" in organizations, an above-average economic status seems favorable to the innovative personality. Studies of revolution have shown that leadership does not come from the most deprived individuals, but from those already on their way up. Preoccupation with survival exhausts the energies of the very poor (Brinton, 1952). Rogers (1962) found that persons with higher social status and more education were more likely to learn of an innovation and to try it.

3. Personal Sense of Security

Security is a factor closely related to the mood which favors creativity. When men feel anxious and threatened they tend to regress to past patterns of action associated with more security. Change easily seems threatening: even new information which disagrees with previous assumptions may be upsetting (Spicer, 1952; Marmor, Bernard, et al., 1960; Zander, 1962; Watson and Glaser, 1965; National Science Foundation, "Knowledge into action", (1969). Most psychotherapists recognize that while patients remain fearful and anxious they cling to well-worn defenses. Only after they achieve a sense of security in the therapeutic relationship are they free to build new responses (e.g., Rogers, 1969). When Harold F. Clark (1935), in a Sloan Foundation project, introduced a new elementary school curriculum he wisely prepared the participating teachers by assuring them that regardless of how the experiment fared, their jobs and salaries would remain secure.

4. Successfulness

Both sides of this coin must be examined. Although security is a prerequisite to accepting innovation, usually successful practitioners in any profession feel little need to change (LaPiere, 1965; Barbichon, 1968; Rosenblatt, 1968; Berlin, 1969; Matheson and Sundland, 1969). A man may be eager for innovative change because he has been unsuccessful in the status quo, but, more frequently, it is because his earlier innovative efforts have attracted attention and helped his upward mobility (LaPiere, 1965).

5. Cosmopoliteness

"Cosmopoliteness," or orientation and contact outside a particular social system, is another characteristic of innovative persons (Katz, 1961; Rogers, 1962; Marquis and Allen, 1966; Becker, 1970). E. I. Thorndike once observed: "The mother of invention is not necessity; it is the knowledge of other people's inventions." Contact with a stimulating number and variety of persons and institutions provides a good background for conceiving fresh combinations. Coleman, Katz, and Menzel (1966) found that earlier adopters of a new therapeutic drug were doctors who read more journals and went to more professional meetings. A similar point was made about school superintendents by Hemphill, Griffiths, et al. (1962). A study of university faculty found the pro-innovation faculty had taught at more institutions (Evans and Lippman, 1968).

6. Professionalism

Lippett, et al. (1960) found professionalism to affect innovation and diffusion, and pointed out that teachers with a high-professional commitment appear more willing to engage in discussions about their profession and professional activities than teachers who are not so highly committed.

III. WAYS OF IMPROVING THE LINKAGE BETWEEN RESEARCH AND PRACTICE

A. Collaboration Between Research Scientists and Practitioners Enhances Knowledge Utilization

The collaboration of research scientists and practitioners in joint research projects appears to provide the greatest potential for maximum utilization of research findings. The strength of this potential stems from the fact that successful collaboration optimally results in research findings which are not only immediately available and understandable to the practitioner, but are relevant to the realities of the practice situation. Havelock (1969a) points out that, in many instances, the practitioner himself is not the ultimate user but serves as linker with the consumer (a physician's patients, for example, or a teacher's pupils).

Of primary importance is the *identification and development of a research problem which reflects the interests and concerns of those affected by the research project* (Fairweather, 1967; Glaser and Taylor, 1969; Havelock, 1969a). Glock (1961) states, furthermore, that maximal utilization is likely to occur when researcher and practitioner interests are parallel, such as when both share a humanitarian concern for a client group.

Another basic principle is that *practitioners should be involved in all phases of the research.* Once an area of research need is identified, the collaboration should continue through problem formulation, study design, data collection, interpretation of findings, and application of the results (Likert and Lippitt, 1953; Crocker, 1961; Kogan, 1963; Rodman and Kolodny, 1965; Nagi, 1965; Glaser, 1966; Halpert, 1966; Hopkins, 1967; Moriarity, 1967; Glaser, 1968; Van den Ban, 1963). Not only can the practitioner make significant contributions to each of the research phases, but also effects participation of the eventual beneficiaries of research in its design, conduct, and evaluation. Those who have a significant part in planning and decisionmaking are not only better informed but are more committed to making use of findings (Spicer, 1952; Lippitt, Watson, et al., 1958; Agnew and Hsu, 1960; Rosenfeld and Orlinsky, 1961; Benne, 1962a; Rogers, 1962; Zander, 1962; Costello and Zalkind, 1963; Dykins, Hyde, et al., 1964; Watson and Glaser, 1965; Wiles, 1965; Glaser, 1966; Niehoff, 1966; Watson, 1966; Cawelti, 1967; Chesler and Fox, 1967; Greiner, 1967; Howard, 1967; Likert, 1967; Aiken and Hage, 1968; Gardner, 1964; Glaser and Taylor, 1969).

An important consideration is the *need for the research team to contain a representative of the agency's top management.* Fairweather (1967) and Glock (1961) emphasize that the person representing administration must have policymaking power. Flanagan (1961) compares two studies, both of which included the users in the planning, but one of which was better utilized than the other, and attributes the superior utilization to the origin of that study with the prospective user and the greater involvement of the management.

Frequent honest and open communication between researchers and practitioners reduces the likelihood of the emergence of stumbling blocks in the study and enhances the chances that research findings will be put to use (Glock, 1961; Poser, et al., 1964; Fairweather, 1967).

Another important step in preventing the development of later problems is early *clarification of practitioner and administrator expectations of the research* (Chester and Flanders, 1967; Fairweather, 1967; Wolfensberger, 1969). Chesler and Flanders (1967) suggest that it is important for the reseachers to make clear to the practitioners at the beginning that the outcome will not be clear dicta on how they should run the organization.

Research is also more likely to proceed smoothly when there is a very *explicit understanding before starting the project between re-*

searchers and agency administrators regarding reciprocal responsibilities (Fairweather, 1967; Glaser and Taylor, 1969).

Collaboration between scientist and practitioner need not necessarily take the form of a joint research project. For example, in studying the optimal conditions for implementation of existing educational research into classroom practice, Eash (1968) favors a "coaction" model which engages the researcher and practitioner in a mutual problem-solving task. Interestingly, both case studies used to support this model involved the participation of not only the practitioners (teachers), but the consumers (pupils) as well. The additional involvement of the pupils seemed to be an important factor in bringing about change.

The organization of more research around issues of practical decision is a two-way process: The practitioners should try to present their quandries in researchable form; the investigators should more often choose problems that have clear implications for practice (Lazarsfeld, Sewell, et al., 1967; Argyris, 1969). If research scientists spend more time in the field, they would better understand the situation, but they are usually reluctant to leave their laboratories. One suggestion is that sponsors who fund projects should require some fieldwork by the investigators (Mackie, Christensen, 1967). Field research usually has implications which can more readily be utilized in practice (Guetzkow, 1959; Guba, 1968).

A special need exists to increase practitioners' appreciation of good theory. Theory is too often seen as the antithesis of practice (Jung and Lippitt, 1966; Pellegrin, 1965). Kurt Lewin's observation that nothing is so practical as a good theory warrants reiteration. Experience alone does not yield concepts or wisdom (Lewin and Grabbe, 1962). Too often, a piece is chosen out of a whole research enterprise and treated as an innovative "gimmick" apart from the theory which makes it meaningful (Dexter, 1965). Goldin, et al. (1969) recommend that training be designed for practitioners which would focus on the understanding and application of research results. On the other side of the coin, they also suggest that the training of researchers should include content on the principles of research utilization with emphasis on the psychosocial aspects of innovation and change. Wolfensberger (1969) recommends that before supporting intraagency research, the administrator engage in self-scrutiny concerning his own attitudes toward research, what are sanctified areas in his own agency in which he cannot tolerate investigation, how well his agency can survive controversy, and how prepared he is to absorb a divergent, nonconformist creative researcher.

Havelock (1969a) identifies three models for diffusion and utilization efforts, with each model containing certain implicit assumptions and requirements. Thus: The research, development, and diffusion model (RD & D) assumes that there is a relatively passive target audience of consumers which will accept the innovation if it is delivered through the right media, in the right way, at the right time. The social interaction model (S–I) is sensitive to the social relations network and stresses the importance of face-to-face contact. The problem-solving model (P–S) considers the user's needs as the starting point for the research, that diagnosis is a precursor to the quest for solution, and assumes that self-initiated change has the firmest motivation basis and the best prospects for long-term maintenance. In all three Havelock models, linkers are seen as potentially helpful influences toward unification and integration.

B. Kinds of Communication Affect Research Utilization

An earlier section discussed some of the important differences between behavioral scientists and professional practitioners and managers. When these differences are taken more fully into account, research findings can be communicated in ways which will make utilization more probable.

1. Improved Reports

While printed reports are the main outlet for the research fraternity, there is little assurance that these are read by many practitioners. Doers may not be readers (Halpert, 1966).

A study of the readership of two research monographs (relevant to rehabilitation) led to the conclusion that most readers who made any use of the finding did so in some speech rather than in any modification of agency practice

(Goldin, Margolin, et al., 1969). In graduate schools of education it has long been recognized that teachers acquire a *vocabulary* consonant with recent research but seldom the corresponding *behaviors*. Research reports are seen as more useful if they are brief and readable (Glaser, 1966; Carter, 1967). The vocabulary of the specialist needs to be translated into lay language (Dehling, 1962; Klein, 1968). The same finding has more impact if it reaches the practitioner several times in slightly differing forms (U.S. Department of Health, Education, and Welfare, "Research utilization in aging: an exploration," 1963; Halpert, 1966; Garvey, 1968).

A report is more effective if it focuses directly and explicitly on a decision which the professional or manager must make (Glaser, 1968; Rosenblatt, 1968). It is important to get the right bit of information to the right person at the right time (Paisley, 1968).

The New England Rehabilitation Institute uses "aggressive dissemination" to carefully selected targets (Goldin, Margolin, et al., 1969). This contrasts with the more common practice of sending out a research finding, via an article or monograph, to the world in general (Archibald, 1968). Retrieval systems can be designed to bring each practitioner the information best adapted to his needs (Kadushin, 1964; Thomas, 1964; Lippitt, 1965; Schoenfeld, 1965; Mackie and Christensen, 1967; Cady, 1968; Klein, 1968; Matheson and Sundland, 1969).

One suggestion for improving reports is that they should not begin with the usual review of the literature, but should capture the interest of practitioners in their first few pages, stating problems in forms the user will recognize as familiar, and perhaps summarizing some main findings (Goldin, Margolin, et al., 1969). Some consultants to a college administration who reviewed, a year later, how many of their recommendations have been followed found: Major points should have been put at the beginning rather than at the end of their report; too many minor recommendations have been made, which lessened the impact of their main findings; there should have been a more careful appraisal of the costs (in time as well as money) of the innovations proposed; and that the bulky appendix was a liability (Wilson, 1961).

It might be useful also to try a reverse communication process—informing behavioral scientists on "the existing state of the (practical) art" (Glaser and Wrenn, 1966). Gaps in existing knowledge might be pointed out and subsequent research might have more to say to practitioners.

One of the problems with most reports of research is that they strike the practitioner as unaware and unappreciative of what already has been achieved. The reader will be in a more receptive frame of mind if the report begins by recognizing the successful work which has already been done (Likert and Lippitt, 1953).

Techniques of communication designed to influence the behavior of others are summarized in a number of studies of attitude, advertising, and propaganda (Hovland, Janis, and Kelley, 1953; Katz and Lazarsfeld, 1965; Schramm, 1963; Watson, 1966). Among the techniques empirically found to be effective are:

(a) Identify the communicator with his audience.
(b) Present the communicator as trustworthy.
(c) Use positive reinforcement rather than threat.
(d) Suggest that people of prominence and influence agree.
(e) If objections are likely to arise later, it is more effective to take account of them at once.
(f) Combine logical and emotional appeals.
(g) Use pictures as well as words.
(h) Repeat, reiterate, say it again.

One should, however, have realistically limited expectations of the effectiveness of even good reports in gaining acceptance for an innovation; at best, than stimulated interest; rarely do they create active advocacy, particularly if the innovation presents discernible difficulties (Glaser and Ross, 1971).

2. People to People

Most practitioners learn mainly from face-to-face contact with other people (Clark, 1962; Rogers, 1962; Coleman, Katz, et al., 1966; Niehoff, 1966; Havelock and Mann, 1968; Rubin, 1968; Roberts and Larsen, 1971). They learn most readily from "influentials" in their profession (Watson, 1966; Lazarsfeld, Sewell, et al., 1968); from persons with contagious enthusiasm

(Bowman, 1959); and from those with whom they feel easy rapport.

Tracing the diffusion of knowledge of a new hybrid seedcorn and of a new antibiotic, Katz (1961) found that information moved through previously established channels of personal communication. Salesmen played an important role, but, "Commercial sources inform; informal (neighbor, professional colleague) sources legitimate." (also Ryan and Gross, 1943).

3. Demonstrations and Visits

Many innovations are most convincing when demonstrated (Niehoff, 1966). One suggestion is that the added cost of such a demonstration project be built into the funding of a research proposal (U.S. Department of Health, Education, and Welfare, "Research utilization in aging: an exploration", 1963; Glaser and Wrenn, 1966). It has been found, however, that most observers who visit and admire radical innovations of experimental schools and colleges do not adopt them (Watson, 1964). They see their own situation as basically different. Visits to situations very like those in which the visitor works back home, but where something new is being done, have greater transfer value (Costello and Zalkind, 1963; Brickell, 1964; Miles, 1964b; Lippitt, 1965b; Wiles, 1965; Cawelti, 1967; Carter, 1967; Mackie and Christensen, 1967). Glaser and Ross (1971) found that a site visit engenders enough advocacy so that the visitor will often aggressively sponsor the innovation when he gets back to his home agency. Exchange of professional workers would facilitate this kind of diffusion (Cady, 1968), as would more released time and travel funds.

Richland (1965) reports a traveling seminar, arranged by the System Development Corp. for 120 educators. After visiting schools where various innovations were in operation, the tour members had a day together to review, discuss, and generalize their observations. The project was evaluated by visits 1 year later to the schools conducted by these educators. In comparison with plausible control schools, the tour participants had introduced many more innovations.

Glaser and Wrenn (1966), following the model so successful in the work of agricultural country agents, suggest that where possible, demonstrations be set up within the very institutions which might profit by adoption of the innovation. Another proposal is that pilot laboratories be established and assigned responsibility to try out development based on recent research, and to publish practical operating guidelines for use by other institutions (Engstrom, 1969).

Rein and Miller (1966) point out that in the area of social action, demonstration projects often serve to postpone change rather than to facilitate it. They do, however, suggest that success of demonstration efforts can be enhanced by better planning with regard to the kind of influence a project is intended to have, the talent group to be influenced, and how influence will be exerted. Similarly, Lippitt and Butman (1969), in a study of mental health demonstration projects, reported that all projects need to have more awareness of the needs of potential adopters and the means to assess and evaluate ways of communicating with them, and that projects need help with planning and carrying out spread activities.

4. Conferences

Personal contact between potential users and innovators may be a crucial condition for the optimal dissemination of new ideas (Glaser, et al., 1967).

Conferences in which research reports are presented and discussed with practitioners are more influential than publications or other one-way reports (Glaser, 1966; Glaser and Wrenn, 1966; Halpert, 1966; Carter, 1968; Chesler, Fox, 1967; Engstrom, 1969). A good illustration of the use of conference is the report by Glaser (1968) on promoting the use of systematized care programs for chronic obstructive pulmonary disease. In another study, Glaser, et al. (1967) report the effectiveness of a combined conference/site visit approach.

Cooper and Archambault (1968) report the success of a conference conducted in two parts separated by a 4-month period during which reading lists and materials were distributed. They also reported that providing the participants with an opportunity to determine the program for the second part of the conference increased their involvement with the issues being considered.

Spooner and Thrush (1970) found that an inter-agency conference, followed by personal follow-up aided appreciably in the dissemination of research findings and was instrumental in initiating institutional change.

Garvey and Griffith (1967) recommended that the effectiveness of conferences would be enhanced by advance distribution of papers to be presented to interested participants.

Conferences have a two-way impact (Nagi, 1965). Practitioners face up to the implications of research findings but researchers also profit from the feedback from those who would like more practical assistance.

5. Mass Media

The media of mass communication have not often been utilized to convey research findings. These media reach too broad a public, and there is not enough opportunity for feedback, with give-and-take (Niehoff, 1966). Paisley (1968) observes that ideas are more likely to be accepted if they come via respected channels, but that actual application of innovative ideas depends more on ease of use than on the medium.

Mass media are helpful in making many aware of a problem or new approach; interpersonal communication can build more credibility (Rogers, 1962; Menzel, 1966; Rogers and Svenning 1969).

6. Combinations

The channels of communication are not mutually exclusive and several together are likely to have more impact than any one alone (Menzel, 1966; Havelock, 1970). Designs for communicating significant research findings may include a combination of T-groups to improve mutual trust, factual presentations, discussion, brainstorming, roleplaying, and planning for action (Schoenfeld, 1965).

C. Middlemen Can Facilitate Research Utilization

The attitudinal and communication barriers between researchers and professional practitioners may prevent new ideas from coming through in a usable form. It is to overcome these obstacles that a new "middleman" function is, to an increasing extent, being utilized.

1. Middleman Concepts

The titles which are used vary and suggest different concepts. Among the earliest was *social engineer* (Watson, 1945; Guetzkow, 1959). Lippitt (1965) suggested *linking agent.* Schwartz (1966) called for a *popularizer* and suggested the name *knowledge linker.* A frequently used name for the middleman role is that of *change agent* (Rogers, 1962). Mackie and Christensen (1967) used *research translator* and also *learning engineer.* Archibald (1968) favors *applied behavioral scientist* while Riley, Hooker, Masar (1968) and Engstrom (1969) prefer *research utilization specialist* (RUS). In a (1970) speech, Glaser suggested *knowledge utilization specialist* (KUS).

Croker (1961), considering utilization of research by military personnel, suggests that officers be trained to be *quasi-social engineers.* Glaser (1966) speaks of a *missionary* to assist potential users in relating to some promising, research-validated demonstration project findings. Glaser and Wrenn (1966) refer to a *human link* between the researcher on manpower issues and the policymakers. They envision also a *change aid team* which might go to any city or institution to help in the process of implementing research results by system changes. The use of a *consultant* in this middleman role is proposed by Lippitt and Havelock (1968). Havelock (1969b) suggests the value of further development of human resources banks which might enable agencies or change agents to locate experts who could select and interpret research, and could assist in the processes of change.

Common to most of the job-portraits of the middleman is an analogy with the outstanding achievements of the county agent in linking agricultural science to farm practices (Clark, 1962). Earlier attempts to improve farming by well-edited bulletins and excellent State college demonstration farms did not bring much change in the practices of the average farmer. The genius of the county agent was that he lived close to his clients and ran the kind of homey local demonstration projects which utilized well-known and well-trusted neighbor farmers.

Havelock (1969a) asserts that the notion of the change agent is moving away from that of the agent as the conveyor of new facts, innovations, and research, as in the country agricultural agent model, toward a concept of the agent as *consultant*, *facilitator*, and *catalyst*. This would imply that the middleman would be serving much broader objectives than simply the spread of information and its linkage to practice.

2. Middleman Roles and Functions

The functions of the middleman are numerous and tend to vary according to the nature of the role which is assumed. Havelock (1969a), in a typology of knowledge-linking roles, suggests the following possible functions: *conveyor* (transfers knowledge from producers to users); *consultant* (assists users in identification of problems and resources, provides linkage to appropriate resources, assists in adaptation to use, serves as facilitator, objective observer, process analyzer); *trainer* (instills in the user an understanding of an entire area of knowledge or practice); *leader* (effects linkage through power or influence in one's own group; *innovator* (initiates diffusion in the user system); *defender* (sensitizes the user to the pitfalls of innovation, mobilizes public opinion, public sensitivity and public demand for adequate applications of scientific knowledge). He identifies marginality and overload as the endemic problems of the linking role.

Lippitt (1962) identifies seven phases for the change agent's activities: (1) The development of a need for change; (2) establishment of a consulting relationship; (3) clarification of the client problem; (4) examination of alternative solutions and goals; (5) transformation of intentions into actual change efforts; (6) generalization and stabilization of a new level of functioning or group structure; (7) achieving a terminal relationship with the consultant and a continuity of changeability.

Mann and Neff (1961) identify different types of power that the change agent needs to understand and be able to use: *legitimate power*—based on obligation or duty; *reward power*—ability to give or withhold reward; *coercive power*—potential for punishment; *expert power*—based on greater knowledge or ability; and, *referent power*—based on attraction and/or identification.

Bennis and Schein (1969) suggests that the role of change agent includes the following elements: He is a professional, guided by certain ethical principles, and acting in the client's interests rather than his own; he is marginal, without formal membership in the target system and often without the immediate supporting presence of colleagues; his role is ambiguous, not widely understood, often lacking in legitimacy and credibility, sometimes viewed with suspicion and hostility; his role is insecure—he may be considered expendable, there are few guidelines for his actions, and he is almost certain to encounter resistances; and his role is potentially risky, both to the target system and to his professional status.

Havelock (1970) weighs the relative advantages of the internal change agent versus the outside consultant. The former has immediacy in his knowledge of the problems and has commitment; the latter is more likely to have perspective and expertise. The insider may be handicapped by past enmities, the outsider by being perceived as a stranger.

The job of the change agent, then, would appear to be difficult and demanding. According to Bennis and Schein (1969), the competence of the change agent should encompass: Conceptual diagnostic knowledge cutting across all behavioral sciences; knowledge of theories and methods of organizational change; knowledge of sources of help; orientation to the ethical and evaluative functions of the change agent's role; possession of operational and relational skills; recognition of his own motivations.

3. Literary Linkages

A variant of the middleman concept is the mediating journal. One of the earliest was the "Journal of Social Issues," published by the Society for Psychological Study of Social Issues which was founded in 1936 to serve a middleman function between research psychologists and public officials. Similar societies arose later in sociology (SSSS) and anthropology (AAP). In the midsixties several other journals were launched to convey to practitioners aspects of behavioral science research which might prove useful to them; notable: "Trans-action"; "Journal of Applied Behavioral Science"; and "Psychology Today." Klein (1968) sees a need for a pocket-size magazine, as readable as the "Readers Digest," to tell social workers what the scientists have recently been discovering.

The Social and Rehabilitation Service publishes "Research and Demonstration Briefs" which attempts to link the researcher and practitioners. They envision another, "Research Trends," which may deal with work in process and arouse interest in the eventual report (Engstrom, 1969). The "Rehabilitation Record" plans to include a tearout section summarizing research findings useful to counselors (Moriarity, 1967).

D. Factors That Influence Utilization Success

Havelock (1969a) cites the following seven factors as accounting for most dissemination and utilization phenomena, and these factors, categorized under somewhat different headings, would be borne out in studies by Halpert, 1966; Glaser and Taylor, 1969; Rogers and Svenning, 1969; Hage and Aiken, 1970; Glaser and Ross, 1971).

1. **Linkage**—reciprocal relationships between resource and user systems.
2. **Structure**—resource system must plan its activities in a structured sequence, and user system must be organized to receive input.
3. **Openness**—resource system must be willing to be influenced by user needs and expose its new knowledge to inspection; user system must actively reach out for new ideas.
4. **Capacity**—both resource and user systems need the amount of wealth, intelligence, etc., needed to deal with a given innovation.
5. **Reward**—both resource and user systems need kinds of positive reinforcement or benefits from the innovation to warrant the investment of time, money, and effort.
6. **Proximity**—proximity facilitates linkage.
7. **Synergy**—several inputs of knowledge, working together over time, through different channels and formats (purposeful redundancy) facilitate adoption.

IV. FACILITATING ORGANIZATIONAL CHANGE

A. Successful Organizational Change Involves Distinct Stages

The analysis of the process of planned change appears to be something of a favorite academic pastime among social scientists. A very comprehensive review may be found in Havelock (1969a). The following discussion focuses on those studies particularly related to organizational change.

Several behavioral scientists have outlined the phases of organizational change (see table I). Although there are differences in terminology, the parallels are impressive: Nearly all begin with a need, a concern, a problem, a discrepancy between ideals and practice, or some other pressure; all move to diagnosis, analysis, or clarification; all see a stage of creating and considering alternative courses of action; all describe an action or implementation phase; and all see a need for followthrough.

Table I.—Stages of successful organizational change

Author	Date	Concern	Diagnosis	Consideration of Alternatives	Action	Follow-through
Lippitt, et al.	1958	Need for change. Get consultant.	Clarification of problem.	Examination of alternatives.	Actual change	Stabilize
Jenkins	1962		Analyze	Determine	Make the change.	Stabilize
Jung, Lippitt	1966	Identify concern.	Diagnosis	Retrieve relevant knowledge. Formulate alternatives. Determine feasibility (tests).	Adopt the Innovation.	Diffusion
Watson	1967	Sensing problem.	Diagnosing	Inventing possible solutions. Comparing Weighing. Deciding.	Implementing	Evaluating Revising.
Greiner	1967	Pressures Arousal. Intervention. Reorientation.	Diagnosis	Specific problems. Invention. Commitment.	Experiment	Search for results. Reinforcement. Acceptance.
Rubin	1968		Diagnosis	Alternative Selection.	Strategy situation. Action. Initiate. Install.	Support transition link to permanent system.

1. Concern

One of the most frequently advocated principles regarding innovation and change is that in order for change to be successful it must be in response to a felt need (Spicer, 1952; Rogers, 1962; Zander, 1962; Costello and Zalkind, 1963; Gallaher, 1965; Lippitt, 1965b; Watson and Glaser, 1965; Coe and Bernhill, 1967; Lippitt, et al., 1967; Glaser and Taylor, 1969). Lippitt, et al. (1958) identify three aspects of the development of a need for change: An awareness of the problem, a recognition that the condition might be improved as the result of change, and a willingness to seek outside help in bringing about the change.

Niehoff (1966) proposes that there are three types of felt need: (*a*) *solicited*—a need of which the recipients are fully aware to the extent that they solicit assistance from the change agent; (*b*) *demonstrated*—a need in which the recipients have demonstrated their interest to the extent that they have tried to solve their problem by their own efforts without outside assistance; (*c*) *ascertained*—a need which, although already existing when the change agent arrives, is only latent within the local social group and must be ascertained by both the innovator and the recipient. Thus, the change agent might have to foster or develop the awareness of need. Both administrators and practitioners must perceive a need. Lippitt, et al. (1958) state that outside help must be viewed as meaningful. In terms of research utilization, practitioners may require persuasion in order to perceive research findings as potentially helpful.

2. Diagnosis

In this phase, original perceptions concerning the problem are sharpened, relevant data are collected, the problem is redefined, and the organization takes a new look at it (Lippitt, et al., 1958; Jenkins, 1962; Jung and Lippitt, 1966; Watson, 1967; Greiner, 1967; Rubin, 1968). Several diagnostic possibilities are outlined by Lippitt (1962): (*a*) An inappropriate distribution of power, too diffuse or too centralized, (*b*) blockage and immobilization of productive energy, (*c*) lack of communication between the subparts of the system, (*d*) lack of correspondence between external reality and the situation as perceived by the organization, (*e*) lack of clarity or commitment to goals for action, (*f*) lack of decisionmaking and action-taking skills.

3. Consideration of Alternatives

This phase involves the translation of diagnostic data and insight into possible strategies of action and selection of the most feasible strategy (Lippitt, et al., 1958; Havelock, 1970).

Rogers and Svenning (1969) identify two steps which might be incorporated into this phase: (*a*) Define, distinguish, and analyze the target; decision and adoption audiences; and (*b*) define the steps that must be taken with each of these audiences to reach a decision, secure adoption, and achieve the objectives of change.

Rubin (1968) states that the selection of strategy is based on consideration of: (*a*) The kind of innovation being installed, (*b*) the characteristics of the organization, and (*c*) the individual engineering the change.

4. Action

Simply put, the change is implemented.

5. Followthrough

If research is to result in improvement of personal and organizational services, it is not enough to identify real problems, to design jointly excellent research plans, to evaluate and to interpret findings, and to introduce promising innovations. Innovations require time to prove their worth and to win acceptance. Some early disappointments are almost inevitable. Hence the importance of continuing support and consultation. Jenkins (1962) points out that whenever planned change occurs, care must be taken to insure that the new condition is stabilized; otherwise the resistant forces may push back toward the former condition.

Lippitt and Havelock (1968) found a technique of "anticipatory rehearsal" one good way of preparing practitioners to understand an innovation and to use it with skill. Miles (1964a) urges support of educational innovations by manuals and aids, special training, and continuing consultation. In *Project Changeover* (Union for Experimenting Colleges and Universities, 1967) after faculty members had been promised administrative support for carefully worked out ideas and plans for better teaching, a substantial number felt frustrated because the necessary space and supplies were not provided. In particular, it was hard to persuade university officials that teaching a highly innovative course takes at least twice as much time as does more conventional instruction, and teaching loads need to be correspondingly adjusted.

A key element in the followthrough stage is evaluation (Lippitt, et al., 1958; Benne, 1962a; Miles, 1964a; Watson, 1965; Bobbe and Shaffer, 1968; Rogers and Svenning, 1969). Innovation should be introduced in a way which provides for evaluation, as a matter of course, and for the expectation that the first model will not be the last word. Self-renewal, as used by Gardner (1964) implies continuous evaluation and further improvement. The "adoption" of a recommended innovation should not be a finished act; it should be only the beginning of a continuing process which may lead to something much better than the original design. This recommendation is implicit in the whole literature of technological development and social change. It is explicit, for example, in Likert and Lippitt, 1953; Wilson, 1961; Watson, 1967; and in Lippitt and Havelock, 1968.

The evaluation of an innovation may be an important key to the long-range success of the effort. Campbell (1969) points out that without objective evaluation the effects of an innovation might easily be misinterpreted, and suggests ways in which social reforms can be staged as experiments. Havelock (1970) perceives, as a segment of followthrough, the change agent's development of his client's continuing capacity for self-renewal.

B. Resistance to Change May Block or Undermine Innovation

Not all change is resisted. Change is often desired and may be accepted with little or no difficulty (Spicer, 1952). When resistance to change does occur, however, it may seriously block or undermine an innovation. An understanding of the possible sources of resistance may thus be critical to the success of efforts to implement innovation.

1. Sources of Resistance

One of the most frequently found generalizations regarding resistance is that *resistance occurs when those affected by a change perceive it as threatening* (Spicer, 1952; Bright, 1969; Havelock, 1969a). In this context, resistance is viewed as a device which functions to protect the individual against fears and anxieties aroused by the implications of the proposed change. More specific instances of resistance based on fear are suggested by the literature.

Fear of loss of status or prestige is often cited as a major reason for resistance (Spicer, 1952; Marmor, et al., 1960; Bright, 1964; La Piere, 1965; Berlin, 1969). Persons who have benefited the most from an existing order are unlikely to welcome a major change (Costello and Zalkind, 1963). In a study of staff response to a mental health innovation, it was concluded that the intensity of the negative reaction of professionals appears related to the extent to which the power and prestige of local service chiefs are threatened, the extent to which existing informal work relations are disrupted, and the extent that coercive pressures are applied to require marked deviations from traditional procedures (Blum and Downing, 1964). Fear of loss of status and prestige appeared to be a significant factor in a study of a hospital practices innovation which, despite initial acceptance and apparent technical success, was ultimately rejected after several months. One possible explanation offered by the authors is that the innovation disrupted the social organization of the nursing unit and resulted in some loss of authority for the head nurse (Coe and Bernhill, 1967).

Resistance may also serve to *threaten job security* (Spicer, 1952; Bright, 1964). While professionals may not frequently fear unemployment, innovation may threaten *devaluation of the knowledge or skills presently required* (Bright, 1964; LaPiere, 1965). This, plus threatened status, may be the source of the frequently found resistance of mental health professionals to use of subprofessionals.

To support an innovation may mean to others that they will be seen as deviate (Cartwright, 1962; Rogers, 1962; Borman, 1965) and spotlighted as targets for attack (Cawelti, 1967).

Resistance is aroused when proposed change threatens or challenges currently held beliefs and values (Hovland, Janis, and Kelley, 1953; Anderson and McQuire, 1965). Some persons cannot seem to hear or understand proposals which appear to run counter to long and firmly held beliefs (Lewin and Grabbe, 1962; Watson, 1966). Berlin (1969) points out that "learning new methods of working and especially using new models like public health concepts, are threatening to our established and already learned theoretical frameworks and practices." Since the practitioner's theoretical framework is essentially his professional value system he is likely to protect all components with some fervor. Moreover, innovations backed by research findings may be particularly threatening to mental health professionals, since much of the theory in this area has not itself been tested empirically.

Fears of loss of self-esteem or sense of competency and/or fear of exposure of weak points can arouse very strong resistance (Berlin, 1969; Havelock, 1969a). Similarly, one study in a mental health setting reports that resistance emerged because of the researchers' failure to outwardly acknowledge currently successful efforts (Poser, et al., 1964). This source of resistance may be an important factor in the difficulties often encountered in the conduct and subsequent application of evaluative research.

Another fundamental generalization is that *people resist changes which they don't understand* (Spicer, 1952). LaPiere (1965) points out that there is a pervasive fear of the unfamiliar among humans. "Fear of the unknown," he states, "can even override the certainty of acute physical pain." Relatedly, studies of teacher rejections of innovations in teaching media found that some rejections occurred because of lack of adequate information. Innovations were claimed to be too complex to be understood (Eichholz, 1963; Eichholz and Rogers, 1964). This might suggest that resistance can stem from either a lack of understanding of the effects of a change, or from inadequate understanding of the nature of the change itself.

In some engineering enterprises there is a kind of resistance which is called N.I.H. (Not Invented Here!) One department may be proud of its own achievements and resentful of designs coming from "outside." Fox and Lippitt (1964) found teachers feeling that it would be beneath their professional pride to borrow from others.

A final, very fundamental, principle of resistance is that *people resist being forced to change* (Spicer, 1952). This factor has been documented and discussed in depth in other sections. The importance of this source of resistance can be reviewed through a rather famous illustration of research designed to influence practice reported by Marrow and French (1962). Top management worked with a behavioral scientist in a study of the productivity of older women in a factory. The results convinced both the researcher and the president that these women were excellent employees, but supervisors still retained their old prejudices in spite of this new information and resisted hiring older women. Not until the whole issue was opened to a group discussion of the supervisors, and they themselves were allowed to come to a group decision, did they decide to give the new personnel policy a fair try.

2. Other Considerations Regarding Resistance

LaPiere (1965) distinguishes between rational resistance, whether overtly or covertly expressed, and *irrational antagonisms*. A rational objection would be, for example, that others who tried an innovation have abandoned it. Irrational factors include apprehension about the unknown, or rigid adherence to certain traditions. A threat to vested interests is rational; suspicion of a secret, worldwide conspiracy may border on the paranoid.

Klonglan and Coward (1970) offer additional insights into resistance through their analysis of adoption as a two-phase process, *symbolic adoption* (acceptance of the idea) and *use adoption*. This suggests that the source of resistance might be pinpointed: symbolic rejection would be related to sociological variables (compatibility, etc.), while economic variables would be involved in resistance to use adoption (trial rejection).

In an organization, desired changes in one part may bring corresponding but unwelcome changes elsewhere in the system. These *side effects* may not have been anticipated and they may stir strong resentment (Costello and Zalkind, 1963; Taylor, 1968; Katz, 1963; Miles, 1965; Wiles, 1965). Sieber (1968) warns that resistance may be seen as having personal sources when it is actually imposed by system, position, and role. Moreover, resistance may indicate a real impracticality of the proposed change (Spicer, 1952). Rogers and Shoemaker (1971) cite the hazards of *overadoption*, because of insufficient knowledge, inability to predict consequences, or a mania for the new.

It is often hard for the advocates of a new idea to empathize with those who don't go along. It is helpful to recognize the *important social role* of the *defenders* who try to conserve the valuable elements of the old in the face of a tumult of change (Klein, 1968). Empathizing with them, the progressives can enter a dialogue which may result in amendments which permit broader support of the new idea. Failure to respect differences in values is likely to bring a backlash of increased resistance.

3. Overcoming Resistance to Change

Most persons and organizations are in "quasi-stationary equilibrium" with some forces driving them toward change and others resisting it. To reduce the resistance creates forward movement with less tension than if effort is made only to override it (Lewin, 1962a; Miles, 1964a; Watson, 1966; Cottle, 1969).

Throughout this document, strategies have been cited which have been proved to be effective in overcoming resistance to change. Some of these strategies are implicit in the function of the change agent; some emerge from intraorganizational dynamics.

Judson (1966) points out that almost every negative response to change can be converted into an opposite and equal positive response; for example, the person who fears loss of status can be shown that, in truth, the change could eventually enhance his status. Judson admits that resistance to change can, in some settings, be offset by compulsion, but that more compatible long-term strategies might include: To persuade that the rewards of the change counterbalance or outweigh the reasons for resistance; to dispel fear through specific reassurances; to develop a full understanding of the change; to provide opportunity for personal involvement in making decisions related to change; to avoid implications of criticism as change is charted; to install change with flexibility so that those who are affected have the opportunity to modify the innovation to meet their specific work situation.

Hovland, Janis, and Kelley (1953) identify the kinds of communication appeals which provide strong incentives for acceptance of change: Substantiating argument; positive appeals calling attention to rewards to be gained from acceptance (in contrast to fear appeals); congruence with group norms; explicit statement of conclusions (rather than reliance upon recipient to draw his own conclusions).

In many organizations, the techniques of group dynamics create a climate of mutual trust and openness which dramatically dissipates resistance to change. Procedures for developing this kind of relationship are variously called T-groups, L (for laboratory learning about leadership) groups, sensitivity training, and encounter groups. The usual procedures are well described in Rogers (1968), and in Schein and Bennis (1965). Case studies of its uses are offered by Beckhard, 1959 also 1966.

It is particularly important that participants feel free to express their doubts and negative feelings. Promoters of a change find it hard to believe that a frank facing of disagreement and obstacles may win more converts than does eloquent exhortation in favor of their proposal. Yet this has been the experience of many consultants on change (Zander, 1962; Benne, 1962a; Glaser, 1966; Glaser and Taylor, 1969). Conflict may be more creative than is bland agreement.

The use of "temporary systems" (Miles, 1964b; 1965; Moriarity, 1967; Havelock, 1969b) to free up communication, enhance trust, and build more productive cooperation is widely advocated. Collaboration between research workers and practitioners can be facilitated by a few days of living together, away from their offices and duties, with the help of a skilled professional to guide the group growth processes (Schein and Benne, 1965; Havelock, 1969b). Likewise the wish of management to introduce innovation can be much better accepted by other personnel if the decisions are reached after some team training (Marrow, 1969). Miles sees the special advantages of a temporary system in the fact that it is held only for a short time, at a place separate from the daily office pressure, so people may experiment with new behavior under conditions of low risk and high learning. The norms which develop in such groups favor openness, authenticity, sharing, inquiry, and mutual aid. Periods of good experience in temporary systems can make work teams better able to deal with real problems in a constructive, creative way.

C. Recognized Leaders With Power and Prestige Can Influence Adoption

In any hierarchical organization subordinates become highly sensitive to the values and preferences of persons in higher positions. In some cases, if the man at the top desires an innovation he can bring it about by fiat (Greiner, 1967). "The rate of adoption of collective innovations is positively related to the degree of power concentration in a system" (Rogers, 1962). In every case, support of top leadership will be a strong factor in bringing about change (Likert and Lippitt, 1953; Flanagan, 1961; Glock, 1961; Mansfield, 1963; Richland, 1965; Sieber, 1968).

Persuasion to change behavior can operate at three different levels. Kelman (1958) has called these: *compliance, identification*, and *internalization.* One complies when one must: this usually means enforcement by sanctions and close supervision. Identification with an admired person may lead to a change which persists only so long as that attraction remains salient. Internalization, the most powerful and stable change pattern, requires that the individual really believe the message. Then he will need no policing or approval from authority figures. Glidewell (1962) has designated the same three patterns for conversion alliteratively as: bargaining, belonging, and belief.

Every significant innovation is likely to run into some difficulties. There are "bugs" in the first model of every invention. Support from top management can be a key factor in giving the new enterprise time and leeway to adjust and to survive. Without sympathetic encouragement from the chief, the innovators usually succumb to the hostility of opponents of the change. They leave the organization or lose heart in further efforts to improve. Research utilization has inevitable elements of risk (Lippitt, 1965b), and corresponding need for extra encouragement. It is realistic to keep in mind that not all acceptance of innovation is enduring; an innovation may be discontinued because it has been replaced by a better idea or because of disenchantment with the results of the innovation (Rogers and Shoemaker, 1971).

Some steps top leadership can take to facilitate use of research findings are:

(1) Clearly advocate, in principle, self-renewal of individuals, departments, and the total organization (Gardner, 1964).

(2) Permit experimenting persons and groups to make some mistakes without reprisals (Zander, 1962; Agnew and Hsu, 1960; Bright, 1964; Watson and Glaser, 1965; Cawelti, 1967).

(3) Provide for pilot experiments (Berlin, 1969).

(4) Arrange rewards, recognition, and promotion for successful experimenters (Bowman, 1959; Benne, 1962b; Eichholz, 1963; Carter, 1968; Howard, 1967; Berlin, 1969). Wolfensberger (1969) suggests that innovative ideas be rewarded, whether they are actually accepted or not.

(5) Encourage attendance at conferences and workshops where new ideas are likely to be generated (Menzel, 1966; Carter, 1967; Mackie and Christensen, 1967; Cady, 1968; Glaser and Taylor, 1969; National Science Foundation, 1969).

Somewhat offsetting the strategy of change from the top down, is the fact that subordinates often can and do subvert changes of which they disapprove, while appearing to conform. "Changes brought about by the authoritative approach are more likely to be discontinued than are those which come from a participative approach," and "an individual's acceptance of an authority innovation decision is positively related to his part in innovative decisionmaking" (Rogers, 1962; Rogers and Shoemaker, 1971).

Leadership in the diffusion of innovation is not limited to hierarchical leadership. Certain influential individuals within colleague reference groups or peer groups function in the role of opinion leaders. Involvement of opinion leaders as advocates of new ideas is an effective strategy of planned change (Rogers, 1962; Burke, 1968; Rogers and Shoemaker, 1971).

Another potential source of prestigious leadership which can influence adoption can be found in the governmental agencies which support research (Havelock, 1969a). They can encourage collaborative projects between researchers, developers, and users. Indeed, Havelock suggests that government agencies should not only encourage research utilization but should insist on it by requiring that dissemination and utilization plans be part of the contract in projects funded by these agencies.

Leaders or managers of an organization can best assure responsiveness to changing needs and capitalize on emerging opportunities by non-defensively inviting, respectfully hearing, and clearly rewarding the expression of constructively creative discontent; by encouraging the spirit of Thomas Edison's slogan for his laboratory: THERE IS A BETTER WAY—FIND IT! (Glaser, 1967).

PART TWO

SUMMARIES OF REPRESENTATIVE ARTICLES UNDERLYING THE DISTILLATION

Agnew, P. C., and Hsu, F. L. K. Introducing change in a mental hospital. *Human Organization*, 1960, 19, 195–198.

PURPOSE

The authors describe the processes involved in introducing an innovation and overcoming the resistance to the innovation.

METHOD

This is an observational study in which the authors describe and analyze the changes they saw occurring. The setting for the study was a 34-bed psychiatric ward of a 516-bed general and surgical Veterans Administration hospital. The innovation studied was: patients wearing their own clothing throughout their stay in the hospital.

FINDINGS AND CONCLUSIONS

1. *Staff Acceptance.*—With the presentation of the proposed change came immediate resistance. Many and varied reasons why the change could not be carried out successfully were outlined by opposing staff members.

(*a*) A series of six meetings, held over a 4-month period, developed several proposals for dealing with the problems arising from the adoption of the proposed change.

(*b*) In these meetings, free and open discussion prevailed among involved staff members, and over the course of the meetings there was a shift from seeing the proposal as totally impossible to reaching workable solutions for the problems involved with adoption of the innovation.

2. *Patient Acceptance.*—The staff were not the only individuals involved. The patients also had to accept the change. When the idea was outlined at the patients weekly forum, the patients also expressed immediate objections. The patients' objections to the change stopped a week or so after the change had been instituted.

3. *Analysis of Shift in Acceptance.*—In their analysis of the shift from resistance to acceptance, the authors focus on two aspects; (1) The techniques used by the psychiatrists in dealing with the resistance, and (2) the deeper emotional sources of the resistance.

(*a*) The psychiatrists' techniques involved encouraging the personnel to express their hostile feelings, while presenting in a calm way detailed solutions to the real problems involved in implementing the change.

(*b*) The deeper emotional sources of resistance are related in the theory of American self-reliance. Americans are likely to resist change imposed on them by authority from above. The authors suggest that the basis of the resistance to the change was the perceived lack of involvement in the decisionmaking process. Blind acceptance of authority would mean reduction of self-respect, and self-reliance.

The authors argue that through the meetings the involved staff began to internalize the change, feeling they themselves had something to do with its origination. It was no longer seen as threatening to their self-reliance and self-respect. The authors felt that the patients came to accept the change because the idea of increased individuality provided fresh support and new directions for their self-esteem.

4. *Author's Discussion of Implications.*—The authors feel that the implications of their study

are particularly important for the administration of large, bureaucratic organizations in which the profit motive is absent and in which job security does not fluctuate directly with production. Emerging from this study are the following conclusions:

(*a*) When an innovation is introduced into an organization, resistance is to be expected.

(*b*) This resistance can be reduced or eliminated if the American culture pattern of equivalence between self-reliance and self-respect is taken into consideration. A series of conferences avoiding any show of authority and emphasizing the independence of all participants seems an effective method.

(*c*) A balance between maximized feeling of independence and the need for enforcing policy and authority is the most essential part of administrative technique in American society.

Comment by Reviewer

There is no indication of how the authors went about studying their perceptions in any scientific manner. The authors give no real basis for concluding that self-reliance and/or self-respect are the crucial factors in change acceptance. Their finding might just as well be explained by participation theory. This observational study does lend credence to the involvement-participation principle in change situations.

The study also points out the importance of recognizing the several different audiences involved in the change process; in this case, as with many changes in education, there are decisionmakers, adopters, and targets. In this case the decisionmakers were separate and apart from the adoption and target audiences. The adoption audience was the staff, in that they had to adopt and implement the change; and the target audience was the patients, in that they were the individuals who felt the direct impact with the change.

PROGRAM INNOVATION AND ORGANIZATIONAL FACTORS

RESEARCH

Aiken, M., and Hage, J. *The relationship between organizational factors and the acceptance of new rehabilitation programs in mental retardation.* Washington, D. C.: Social and Rehabilitation Service (formerly Vocational Rehabilitation Administration), report of project RD–1556–G, Jan. 1, 1968.

PURPOSE

The two major objectives of this research study were to determine on the one hand those organizational characteristics that affect the rate of program innovation in welfare agencies and, on the other hand, those that affect the extent of cooperation among them.

METHOD

This is an intensive longitudinal study of 16 rehabilitation organizations.

FINDINGS AND CONCLUSIONS

1. The rate of new program implementation was highly and positively correlated with the following staff characteristics:

(*a*) The number of occupational specialties.
(*b*) The amount of extra-organizational professional training.
(*c*) The amount of participation and decision-making.
(*d*) The amount of job morale.

2. It was negatively correlated with:

(*a*) The amount of job codification.
(*b*) The satisfaction with expressive relationships.

3. Other factors that were considered, such as amount of professional training, amount of hierarchy of authority, amount of rule observation, had little or no association with the program rate change.

4. Several personality variables were considered and were only weekly associated with organizational innovation.

5. The best predictors for future innovation, even after controlling for factors of organizational size, age, etc., are the number of occupational specialties and the extent of extra-organizational professional activity.

6. Those organizations most likely to have many cooperative relationships have the following characteristics:

(*a*) A high number of different occupational specialties.
(*b*) A high rate of program innovation.
(*c*) A high degree of extra-organizational professional activity.
(*d*) A high degree of participation by staff in decisionmaking.
(*e*) A high frequency of committee meetings.

7. From a practical point of view, this suggests that government agencies interested in increasing the likelihood of successful demonstration grants should look to organizations with a wide number of organizational specialties and a previous history of successful program change. For those leaders of health and welfare organizations interested in increasing program implementation, an increase in the following characteristics of their organizations is recommended.

(*a*) Number of occupational specialties.
(*b*) Amount of extra-organizational professional activity.
(*c*) Amount of participation in organizational decisionmaking.
(*d*) The amount of job morale.

8. Closeness of supervision should be decreased as should specification of role requirements of jobs.

9. The rate of program implementation should not be accelerated too rapidly, even given availability of additional funds. Growth without internal strains is best achieved at a constant pace.

10. Frequency of committee meetings and number of informal contacts of lower status staff with higher status staff, especially with departments other than their own, is correlated with program implementation. Also, if the staff perceives an emphasis on new programs, new programs are more likely. On the other hand, characteristics of the boards of directors of private agencies had little or no relationship to organizational innovation. In terms of cooperation, the authors note that joint programs are more likely to occur in research and education areas than in various kinds of service activities and are more likely to occur between complex organizations.

11. The authors' final conclusion is: "Together these findings might suggest it would be better to develop cooperative relationships among organizations by granting funds for the development of new programs and allowing increasing complexity to lead to spontaneous cooperative relationships; or by granting funds to several private agencies simultaneously. At the same time, this is unlikely to achieve the goal of coordination of community efforts. Indeed the problems that emerge from the needs from organizational autonomy are likely to make such a project highly problematic."

12. The third objective of this study was to test predictions on joint programs, but this has not been possible yet because the project has not developed any joint programs with the 16 organizations in the sample.

Comment by Reviewer

This is an interim report and will be followed by another which may resolve an ambiguity in the authors' conclusion (No. 11).

RESISTANCE TO CHANGE

LABORATORY EXPERIMENT

Anderson, L. R., and McGuire, W. J. Prior reassurance of group consensus as a factor in producing resistance to persuasion. *Sociometry*, 1965, 28, 44–56.

PURPOSE

This study was designed to test the notion that a highly reassuring defense confers less resistance to a subsequent persuasive attack than does a more threatening defense. The authors suggest that an individual's ignorance of opposing beliefs and/or arguments against his makes him overconfident about his beliefs; hence he is little motivated to absorb a defense even when one is presented to him. *What he needs in order to develop resistance is not a reassuring defense telling him the reasons his belief is true, but a threatening defense that makes him realize the belief's vulnerability.*

METHOD

A total of 96 students from a general psychology class were selected from 1,500 possible subjects because their free hours coincided with laboratory schedules. They were divided into three groups and each group was exposed to a different type of written message concerning generally, strongly held beliefs* concerning health practices. The three prepersuasion treatments were: (1) A message supportive of currently held beliefs, (2) a message containing arguments that were to be used later in an attempt to change currently held beliefs, and (3) a message that was generally contrary to currently held beliefs but that did not contain the actual arguments to be used in the later change attempt.

Following the initial exposure all subjects were exposed to the same attempt to change their beliefs.

FINDINGS AND CONCLUSIONS

1. Individuals exposed to messages containing supportive arguments for currently held beliefs are more vulnerable to attempts made to change their beliefs.
2. Individuals become more resistant to persuasion attempts when they are presented with arguments held against their beliefs, even if the arguments are not the ones used in the persuasion attempt.
3. When individuals are presented with arguments that are to be used again in attacking their beliefs, they are most resistant to attempts to persuade them to a position than the one they hold.

Comment by Reviewer

If one were to use the findings of this study in persuasion attempts to increase research utilization among mental health practitioners, it would mean first supporting their currently held attitudes and beliefs and then dramatically presenting material and demonstrations to the contrary (that is, if their original attitudes are negative).

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*These were determined from a preexperiment survey of beliefs and issues concerning commonly accepted health practices.

APPLIED SCIENCE

DESCRIPTION AND ANALYSIS

Archibald, Kathleen. *The utilization of social research and policy analysis.* (Doctoral dissertation, Washington University) Ann Arbor, Mich.: University microfilms, 1968, No. 68–10, 771.

PURPOSE

The author explores the diverse approaches to the activity termed social science. She provides a systematic and generalized description of the rationales, structural opportunities, tactics, and consequences of the activities of applied social scientists. This is used as a basis for answering the question: How can the social sciences be more effectively utilized in the formulation of policy?

METHOD

The author focuses on the policy area of arms control, disarmament, and defense. Her main point of reference when discussing the applied social scientist is the expert with reformist interest (experts who both seek knowledge and seek to have it used in the service of desired changes).

The data for the analysis come from: (1) A thorough review and analysis of the literature related to policy analysis and applied social science; (2) focused interviews with 34 staff members of the U.S. Disarmament Administration, and more open-ended and intensive interviews with 13 experts; and (3) observation of several meetings between disarmament personnel and social scientists.

FINDINGS AND CONCLUSIONS

1. The author assumes that many of the problems arising in the applied social sciences can best be understood as problems of the role of the applied social scientist. Three basic orientations of applied social scientists which can be thought of as "ideal types" are identified: the *academic*, the *clinical*, and the *strategic*. The differentiating characteristics of the three orientations are summarized in figure 1.

2. The norms, values, and incentives of pure science provide the basis for the social structure of the science system. Applied science is a low-status and marginal member of the science system because many of its norms are different. The applied scientist's orientation to some kind of user audience other than fellow scientists or students is the essential distinguishing characteristic of applied social science.

3. Of the structured sources of potential influence on the applied social scientist, the greatest influence comes from pure science. Another possible source of influence for the applied scientist is a reference group of other applied scientists. Were such a reference group to develop it could serve the following functions: (1) Provide criteria of legitimacy for applied science, (2) provide some criteria for evaluating the quality of applied science, (3) establish ethical behavior codes, and (4) prescribes efficacious behavior vis-a-vis clients.

Figure 1.—Summary of typology of orientations

Academic orientation	Clinical orientation	Strategic orientation
Applied activities bounded by discipline.	Applied activities bounded by alter.[1]	Applied activities bounded by problem.
Nonspecific diagnosis. Works in *area* defined by policy concerns, but on problems chosen in terms of disciplinary criteria.	Specific diagnosis concerning alter, that is, the user audience itself. Talks about policymakers or policy process.	Specific diagnosis concerning alter's resources and/or environment. Talks about policy, content of policy.
Alter assumed to know own problem, or at least not the expert's worry if alter does not.	Alter assumed not to understand own problem; expert performs interpretive function.	Alter may or may not know own problem, but assumed to often ask the wrong questions about it.
Contributes to alter: Conceptual framework, general principles, and/or empirical information.	Contributes to alter: New way of approaching reality, self-understanding, and/or techniques.	Contributes to alter: Analysis of practical problem as it "should" confront alter, explication of alternatives, and/or specific recommendations.
Disciplinary colleagues remain the primary audience, user audiences secondary.	User audiences at least as important as disciplinary colleagues.	User audiences at least as important as disciplinary colleagues.
Insignia of expertise: precision on disciplinary details.	Insignia of expertise: perhaps careful specification of intentions and values.	Insignia of expertise: precision on the details of alter's data.
Expert feels he or his discipline has *some* responsibility to contribute to the solution of practical problems.	Expert feels it is *his* responsibility, and his discipline's, to contribute as much as possible to the solution of practical problems.	Responsibility defined in terms of being careful and precise when working on practical problems and when interacting with user audiences.
Stated interest in communicating to alter, often through intermediary.	States interest in helping alter. Asymmetrical.[2]	Stated interest in influencing alter. Symmetrical[2]
Alter seen as different. Nonutilization explained by cultural gap, missing middlemen, or fact that expert contribution is only one of many inputs.	Alter seen as often irrational, constrained. Nonutilization explained by resistance and/or nonsupportive environment.	Alter seen as usually rational but not always intelligent. Nonutilization explained by misunderstanding, ignorance, parochial interests, and/or inertia.

[1] Alter is a synonym of client, user, target, or practitioner.

[2] An asymmetrical relationship implies help for the alter; the expert does not expect to be helped in return. A symmetrical relationship with the alter means the expert expects to influence the alter and he expects the alter to influence him, in turn. It implies the probability of mutual influence.

4. Several different consumer roles of applied social science research are defined:

- (*a*) *Targets* or *target systems* are the entities which are supposed to be changed, or improved, or otherwise affected by the expert's contribution. A target may or may not be in direct contact with the expert.
- (*b*) *Implementers* are all those persons or social units who, as relatively autonomous decisionmaking units, give practical effect or expression to an expert's knowledge.
  - (1) Clients or clients systems are those social units which utilize as relatively autonomous decisionmakers, the expert's knowledge and are at some point in direct contact with the expert or expert system.
  - (2) Client targets or client-target systems are those social units implementing the expert's knowledge and being changed by it.
- (*c*) *The public audience* are those role others who are neither implementors nor targets, but rather are transmission channels. The applied social scientist is enacting a publicist role when he communicates with the public audience.
- (*d*) *Future implementers* are those individuals who may eventually produce long-term, nonspecific applied payoffs. Students would be a good example of future implementers. The applied scientist is enacting an educator role in this instance.

5. The possible role relationships between applied scientists and the various consumer audiences are summarized in figure 2.

6. The author specifies the conditions under which one orientation (academic, clinical, or strategic) is more appropriate than another.

- (*a*) *The role of the change agent.*—Any of the three orientations may be useful to the change agent, depending on the situation.
  - (1) A clinical orientation in the change agent role is appropriate when three conditions are met. (*a*) The client perceives a need for change; (*b*) when the change agent is viewed as being fully the agent of the client target (is trusted); and (*c*) when the change agent has sufficient access to, and leverage with, the client target.

    The clinical orientation is particularly appropriate in the following situations: (*a*) When severe conflict between two or more social units exists, (*b*) when by adopting a clinical orientation the change agent can effect change in one member of a group

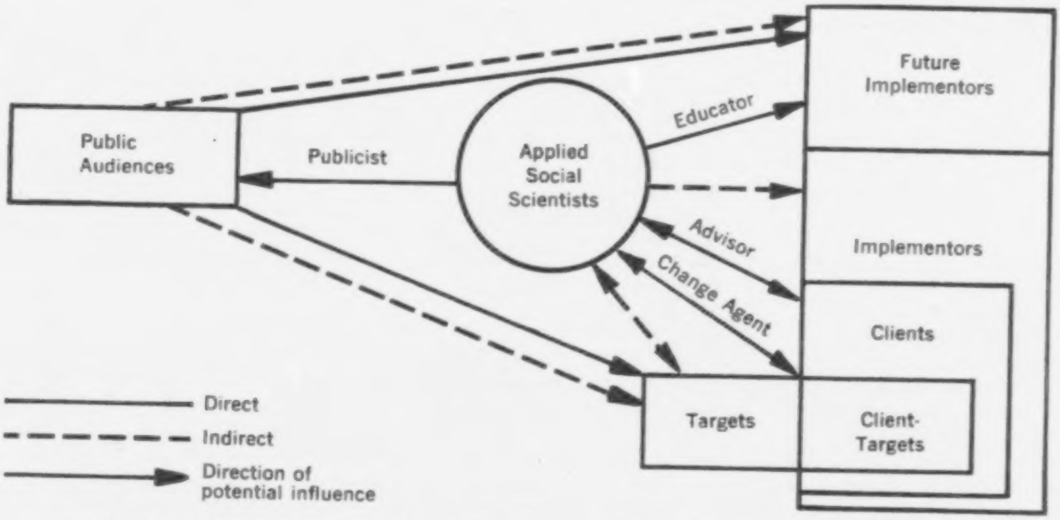


Figure 2.—Possible role relationships for the applied social scientist in utilization activities

and thereby affect change throughout the group, (*c*) when an organization recognizes itself in a state of dire crisis, and (*d*) when it is a case of limited and specific change.

(2) An academic orientation to the change agent role may be appropriate if the client target does not feel a strong need for help, if it has a favorable view of social science, and if the collection of data causes little inconvience to the client target. An academic orientation may led to a better understanding of the client target's problems, but it will not produce change unless both the change agent and the cilent are able and eager to make it.

(3) A strategic orientation is appropriate when a symptomatic analysis of the alter situation is required; i.e., the diagnosis is made in terms of the alter's resources and environment. In many instances the most fruitful change agent approach may involve first a strategic orientation to get the ball rolling, then a clinical orientation to apply leverage and secure change.

(*b*) *The role of adviser.*—In the advisory situation, the strategic orientation is most appropriate. The probability of mutual influence inherent in the strategic orientation is most suited to the advisory situation. The academic orientation is not often effective because it is not likely to produce a specific diagnosis of a client's situation, and the clinical orientation is usually inappropriate as the client is treated in a way he does not expect.

(*c*) *The role of educator.*—The academic orientation is most appropriate in the situation where the applied scientist's "role others" are not current implementors. General knowledge is provided in the hope that it will become relevant at some later date.

7. The consequences of the applied social scientist's orientation are discussed in terms of transactions and trade-offs.

(*a*) *Transactions.*—A new view of the essential processes or sequences of activities of the applied scientist is advocated which focuses on applied social research as a sequential transaction. This focus suggests looking at applied science as a relationship or transaction between a scientist and some user audience. For the transaction to be complete there must be some utilization of the knowledge produced. The transaction sequence is affected by the openness or closedness of the communication. The more closed a transaction the more limitations on the applied scientist. This applies particularly to limitations imposed by either the client or the scientist on the scientist's ability to communicate the knowledge he has produced to other audiences.

(*b*) *The critical trade-off: felt autonomy versus felt influence.*—Autonomy is the salient variable in the production of knowledge and influence is the most salient variable in the use of knowledge phase. Although the academic orientation is least costly and least risky of all the orientations on the autonomy-influence interchange, both the clinical and strategic orientations offer a greater opportunity to influence.

Comment by Reviewer

The conceptual framework based on the role orientation of the applied scientist may be helpful in accounting for some of the problems in research utilization. One primary message of this paper seems to lie in the author's analysis of the limitations inherent on the academic orientation. The fact that much research is carried out by scientists with an academic orientation means the potential user of the research knowledge outside the specific scientific community is ignored.

INNOVATION DIFFUSION
SURVEY

Arndt, Johan. New product diffusion: The interplay of innovativeness, opinion, leadership, learning, perceived risk, and product characteristics. Unpublished paper, Graduate School of Business, Columbia University, New York, 1968.

PURPOSE

The author seeks to shed some more limelight on the interplay of factors affecting the diffusion of innovations. Selecting innovations differing in complexity and unit price, he examines the affects of innovativeness, opinion leadership, learning, and perceived risk on the diffusion of these innovations.

METHOD

The innovations studied in this investigation were consumer products ranging in complexity and risk involved in adopting from soft margarine to electric dishwashers.

Sample

Using a systematic sampling from the telephone directory of Queens, N.Y., the author conducted a telephone survey of 250 housewives.

FINDINGS AND CONCLUSIONS

1. Positive relations were found among innovativeness, opinion leadership, and learning. These three variables were negatively related to perceived risk in the adoption of new products. That is, early buyers had more experience and familiarity with the product and were more likely to exert personal influence. As complexity and risk increased so did the overlap of innovativeness and opinion leadership.

2. The more similar the products the more likely an overlap of innovativeness, opinion leadership, and learning.

Comment by Reviewer

This study supports many other findings in the diffusion field. Early adopters are likely to be opinion leaders because they have had more experience with the innovation and know about it; therefore, others look to them for advice. Mental health practitioners utilizing research findings can be used as opinion leaders to help encourage others. They are likely to have more credibility than outsiders promoting utilization as they can relate their actual field experiences.

INDIVIDUAL CHARACTERISTICS AND DIFFUSION OF SCIENTIFIC KNOWLEDGE
ANALYSIS

Barbichon, Guy. The diffusion of scientific and technical knowledge. *Journal of Social Issues*, 1968, 24, 5–12.

PURPOSE

Barbichon asserts that in order to examine the problems raised by: (*a*) The acceptance of information likely to modify attitudes and knowledge, and (*b*) the intensity and specificity of these modifications; we first need to analyze the attitudes toward knowledge and sources of knowledge. Further, we need to examine the cognitive processes by which we integrate scientific and technical knowledge. This article is directed toward an analysis of these factors and how an awareness of them can be utilized in mass media campaigns in developing countries.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. Many studies indicate scientific notions and ideas acquired during formal education prevent the integration of new scientific information into the practice of one's profession.

2. There are three types of knowledge: Theoretical, technical, and practical. The cognitive exploration involved in the acquisition of new knowledge depends on both individual and social system norms concerning each of the three types of knowledge. Variations in the desirability of scientific exploration among cultures characterize the exploration models of the individuals functioning in that culture.

3. The existence of both interindividual and intercultural differences in cognitive styles makes it necessary to identify the components of these styles. The author suggests three basic elements—

(*a*) the relative importance of analytical and synthetic processes, of differentiation and integration;
(*b*) the normative form of access to knowledge (memorization, library, etc.); and
(*c*) the ideas pertaining to the possession of knowledge (erudition versus encyclopedism versus ability to solve problems).

4. The individual's cognitive style and that of the social system within which he operates both affect his receptivity to new knowledge.

5. Other factors affecting knowledge transmission are the attitudes of the knowledge emitter toward his potential receivers. The knowledge-emitter's image of the receiver's needs, cognitive styles, abilities, etc. affects the communication process. Restrictions placed by the emitter may be due to size of audience, content of the message, or cognitive supports of the message, as well as his image of the potential receiver.

Comment by Reviewer

The author raises several points of interest of those attempting to secure research utilization among mental health practitioners. His idea concerning the impeding force of formal and previous educational experiences is certainly relevant and often goes unconsidered.

It would seem that we must unfreeze present states of knowledge, to admit new. Often "research" is served up to the practitioner with no efforts made to look at how this research fits into what he already "knows to be."

Barbichon also points out that the attitudinal norms of the system regarding science influence the individual's willingness to use scientific knowledge. Many individuals working in the professions today were ingrained with a fear of research and science, and come to their work with an attitude of "How can research possibly help me? Those people don't see it like it really is." The currently functioning norms of the mental health practitioner's social system are most often hostile toward research utilization.

In addition, the education of many mental health practitioners fosters a cognitive style that emphasizes acquisition and storage of information (for test purposes), not the integration of knowledge into a continuously renewing working framework. The researcher's perceptions of the mental health practitioners may also constrain the transmission of relevant knowledge. In line with Barbichon's suggestion, research findings can probably be made most relevant if introduced in the operational context of the mental health practitioner's work.

INFORMATION FLOW

SURVEY

Bassett, G., Davison, W. P., and Hopson, A. L. *Social scientists, university news bureaus, and the public: Some factors affecting the communication of social science information.* New York: Graduate School of Journalism, Bureau of Applied Social Research, Columbia University, March 1968. Prepared for the Russell Sage Foundation.

PURPOSE

This report is primarily concerned with mass media communication. It is an examination of factors affecting the flow of social science information to the mass media, and a suggestion of ways to facilitate the flow.

METHOD

Members of the sociology departments at six universities listed as having superior social science faculties were interviewed.

FINDINGS AND CONCLUSIONS

1. Almost all of these sociologists felt ambivalent about communicating the results of their work to the public.

(*a*) On the one hand, there was a widespread feeling among the scholars that the public had a right to know what they were doing and thinking. A sample quote is, "I think most research is significant and the public ought to be informed about it. I think scholars have the obligation to communicate."

(*b*) On the other hand, many of those interviewed said they simply could not find time for communicating, and finding time is a good index of basic commitment. A sample quote is, "If the sociologist is really concerned about scholarship, it's going to be a full-time proposition. His scholarship is bound to suffer if he makes forays into the world."

2. The ambivalence disappeared when it came to communicating with colleagues. Sociologists feel a powerful motivation to communicate with their colleagues. This is indeed a central role obligation. Sometimes the reference group is very small, consisting of only a handful of people working in the same specific field. Some sample quotes are: "I communicate by writing articles that only a couple of hundred people read." "We're trying to communicate to people with a more narrow interest." Furthermore, there seems to be a group norm against public communication.

Comment by Reviewer

The comments of the persons interviewed are relevant in providing insights on the attitudes of academicians toward applications of research. If this negative attitude toward public communication is prevalent in psychology, too, it would reinforce the view that linking agents are needed in facilitating application of research results.

DIFFUSION
EXPERIMENTAL STUDY

Becker, Marshal H. Factors affecting diffusion of innovations among health professionals. *American Journal of Public Health*, 1970, 60(2), 294–304.

PURPOSE

The objective of the study was to identify factors facilitating or inhibiting adoption of new programs by administrators of local health departments.

METHOD

Data were gathered from 95 local health officers from three States (Michigan, Illinois, and New York) by a combination of self-administered mailed questionnaires and a followup telephone interview lasting about an hour. Two kinds of innovations were studied: Those having a high-adoption potential (HAP) and those having a low-adoption potential (LAP). The first category were innovations which required no real departure from traditional patterns of operation (measles immunization in two States, topical application of fluoride in the third); the second category required substantial departure operationally (diabetes screening for all three States).

The focus of the study was on the communications network among health officers.

FINDINGS AND CONCLUSIONS

1. There was a high-positive correlation between early adoption and the health officer's centrality in the communication network. (Centrality is designated as an attribute of the health officer who is frequently contacted by other health officers for information and advice, in contradistinction to the "marginality" of those who are rarely contacted.) This correlation was more pronounced for the HAP innovations than the

LAP; the assumption is that when an innovation conflicts with prevailing norms, the marginal person (with less at risk) is more likely to pioneer the adoption. The investigator points out the following implications of this finding:

(*a*) It supports the two-step flow hypothesis: new ideas are first received and tried out by persons exposed to and influenced by information coming from outside the group; because they have this information, they are seen by their peers as opinion leaders.

(*b*) Peer influence is important not only in passing along information about new programs but also in legitimating these programs.

(*c*) In developing strategies for introducing a desirable innovation, it is crucial to be familiar with the communication network for a given group of professionals.

2. There was high correlation between the centrality of a health officer in the communication network and his cosmopoliteness. The cosmopolite looks outside the community for new ideas and seeks approval of his professional colleagues; the localite is more oriented toward his own department and places greater value on the approval of his own staff and the local community.

3. When health officers were asked to identify their most valued source of information concerning innovations in public health, the early adopters favored professional meetings outside the State, professional journals, and postgraduate courses; those slower to adopt placed greater value on local sources (voluntary health agencies, local medical societies).

4. The following professional and attitudinal characteristics were found to be positively correlated with centrality and cosmopoliteness: Rank in medical school graduating class, degree of political liberalness, number of professional degrees earned beyond baccalaureate; in addition, recency of graduation from medical school and possession of specialty training was associated with cosmopoliteness.

5. The following interpretations are advanced by the investigator:

(*a*) For LAP innovations, normally early adopters hold back until the initial risks have been taken by others.

(*b*) Centrality may be a result rather than a cause of early adoption; it is because they are early adopters that influential professionals are sought by their peers. Having tried the innovation first, the early adopters will know where the "bugs" are; their less adventuresome colleagues are eager to benefit from their experience.

(*c*) In his selection of information sources and adoption times, the professional is motivated by a desire to maintain or increase prestige and professional status.

6. The following implications for action are cited:

(*a*) Opinion leaders among health professionals should be identified and their exposure to innovation should be facilitated (attendance at out-of-State professional meetings, regional conferences, continuing education programs).

(*b*) The risks of innovation should be reduced by ample support in terms of fund and personnel.

(*c*) All members of a communications network should be informed of the actions of early adopters as soon as possible.

Comment by Reviewer

Essentially, these findings confirm hypotheses which have been advanced with respect to other professional fields, and their applicability to the health profession is of interest. Perhaps even more interesting are the few incidental findings in which the health profession may be atypical (as in No. 5, above).

ORGANIZATIONAL FACTORS AND INNOVATION

SURVEY STUDY

Becker, S. W., and Stafford, F. Some determinants of organizational success. *Journal of Business*, 1967, 40, 511–518.

PURPOSE

The authors of this article set out to investigate the variance in organizational efficiency. The variables considered to be most importantly related to efficiency were: (*a*) Organization size, (*b*) adoption of innovation, (*c*) psychological distance in the management team, (*d*) administrative size, and (*e*) the state of the organization's surrounding environment.

METHOD

The study was based on a sample drawn from the 140 savings and loan associations in Cook County, Ill.

FINDINGS AND CONCLUSIONS

1. Initial growth of the organizations was highly related to the growth of the surrounding community. This was negatively correlated with innovation.
2. After this easy growth period (growth in terms of adding surplus to their funds), there was usually an increase in administrative staff. With this increase in administrative staff came an increase in innovation.
3. In studying the communication within the management group of these organizations, the authors found that organizations with good communication within the managerial group and low-growth rate of the surrounding community are about as efficient as those in rapidly growing communities with poor communication.
4. The group with good communication also had a higher rate of efficiency and a significantly higher rate of innovations.
5. The authors conclude that good group atmosphere generates communication within the managerial group about how to improve business.

Comment by Reviewer

This study seems to indicate that an easy flow of communication within the staff provides an atmosphere for innovation.

CONSULTANT ROLE

CASE STUDY

Beckhard, Richard. Helping a group with planned change: A case study. *Journal of Social Issues*, 1959, 15(2), 13–19.

PURPOSE

This is an account of how a year's consultation to a small industrial organization helped change communications and working relations. The author describes his assumptions, some of his procedures, and makes suggestions for the consultation process.

METHOD

The author was approached by the client company to play for change. Because of the company's size and the president's emphasis on human relations, a strong "family feeling" had already developed. The consultant moved in and together with the company people defined the problem. They planned the first action steps and the consultant helped them take them. He then withdrew while the company took action and assessed the results of its action. Finally he returned to the company, reestablished the relationship, and evaluated what had happened and his own part in it.

The author made several assumptions:

(1) Organizational change is a problem in human learning.
(2) Persons have to learn to behave in new ways before their attitudes and interpersonal relations can change.
(3) Some of these new ways of behaving may involve better ways of finding out about the other person, giving and getting feedback, and trying out new behavior on the basis of that feedback.
(4) The consultant can help the clients collect appropriate and correct information. He can also help them use this information.

FINDINGS AND CONCLUSIONS

The author makes suggestions for effective consulting:

(1) The consultant must relate to the several parts of a system before he can solve problems in their mutual relations.
(2) Feedback is necessary, both within the client system and between the client system and the consultant.
(3) The consultant must give help which is appropriate to the client's needs and readiness to change. He must not confuse his own needs with the client's nor foist upon the organization help for which they see no need.
(4) The client should always be free to reject the consultant's ideas, his help, or the relationship with the consultant.
(5) It is valuable for the consultant to be able to withdraw temporarily and then, after the client system has worked independently, to return and establish a new relation on the basis of that independent action.
(6) The relation between client system and consultant changes from a dependent one to interdependence by moving through the stage of independence.

Comment by Reviewer

Although this article is relatively unspecific and some of its suggestions are rather platitudinous, the idea of the consultant's withdrawal and return is a provocative one. The article may be useful in cases where fostering innovation or research utilization involves the use of consultants.

FUNCTION OF PLANNED CHANGE
ANALYSIS

Benne, Kenneth D. Deliberate changing as the facilitation of growth. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 230–234.

PURPOSE

The author analyzes the relationship between a change agent and a client system that has solicited help in effecting change and/or solving problems.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. The direction of the change is defined by the concept of growth, which in turn is defined as increased ability on the part of the client to face and solve its problems.

2. A major goal of the agent of change is, therefore, facilitation of the institutionalization of appropriate methodology for adaptation and adjustment by the client system. Norms consonant with growth are:

(*a*) *Problem solving should be experimental.*—Growth cannot be achieved in a social system that is stereotyped and inflexible in its modes of response to difficulties. Experimentation requires sensitization to and institutionalization of feedback mechanisms regarding external impacts and internal functioning of parts.
(*b*) *Problem solving should be collaborative.*—All parts of the system ideally cooperate

in identifying difficulties in operation, in increasing the internal and external meaning and validity of alternative adaptive and adjustive responses to the situation.

(*c*) *Problem solving should be task (and reality) oriented rather than oriented to the maintenance of the prestige of some parts of the system over other parts.*

(*d*) *Problem solving should be educational and/or therapeutic for individual participants in the change.*

(*e*) *Effective and efficient problem solving requires channels of communications within the system that make available for public decision and choice, in undistorted form, all relevant data, including data concerning feelings and evaluations (negative and positive) from each and every subpart of the system.*

3. Barriers to growth in social systems.

(*a*) Confusion of the ideological image of the system with the actual behaviors of the system.

(*b*) Lack of quality control over the feedback processes which provide information on which controlling decisions are based.

(*c*) Suppression of dominant feelings of some or all parts of the system in processes of decisionmaking.

(*d*) Narrow time perspective within the decisionmaking processes—a lack of perception of long-range consequences of action as relevant to immediate decision—tends toward a pattern of living from crisis to crisis in the life of the system.

(*e*) Inadequate and/or unbalanced role differentiation in system functioning and in processes of decisionmaking.

(*f*) Inadequate and inaccurate interpretive processes for coding and weighting information received through feedback.

(*g*) Inaccurate definition of limits and alternatives in decision situations.

(*h*) Lack of adequate mechanisms for mediation and adjustment of conflicts between parts of system and between the system and other systems in the environment.

Comment by Reviewer

The systems in which mental health practitioners function must be considered in any effort to change the behavior of individual practitioners. Most of the concepts developed in this article are related to systems norms. The barriers to growth can be viewed as system barriers to research utilization.

PLANNED CHANGE
SUGGESTIONS

Benne, Kenneth D. Democratic ethics and human engineering. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 141–152.

PURPOSE

Operating under the assumption that change agents should incorporate democratic norms or principles into their strategies and plans for introducing change, Benne offers the following principles or methodological norms as guides to planned change efforts.

METHOD

The author has based his analysis on his own knowledge, experiences, and observations.

FINDINGS AND CONCLUSIONS

1. The engineering of change and the meeting of pressures on a group or organization toward change must be collaborative. Two kinds of collaboration are suggested: (*a*) Collaboration across lines on divergent action interests in a given situation requiring change; (*b*) collaboration across lines of "theory" and "practice," between researchers and practitioners.

2. The engineering of change must be educational for the participants. Essentially, the

change agent should be training the individuals or organizations involved to be their own change agents, to be able to solve subsequent problems requiring change.

3. The engineering of change must be experimental. Planned arrangements must be seen by those who make them as arrangements to be tested in use and to be modified in terms of the situation.

4. The engineering of change must be task oriented, that is, controlled by the requirements of the problem confronted and its effective solution, rather than oriented to the maintenance or extension of the prestige or power of those who originate contributions.

5. The engineering of change must be anti-individualistic, yet provide for the establishment of appropriate areas of privacy and for the development of persons as creative units of influence in our society.

Comment by Reviewer

This article is written with a clinical orientation. The principles set down appear sound.

PLANNED CHANGE
READINGS

Bennis, W. G., Benne, K. D., and Chin, R. (Eds.) *The planning of change.* (2d ed) New York: Holt, Rinehart & Winston, 1969.

PURPOSE

Change is with us. The major purpose of this book is to provide a basis for the application of systematic and appropriate knowledge to human affairs for the purpose of creating intelligent action and change.

The authors define planned change as "a conscious, deliberate, and collaborative effort to improve the operations of a system, whether it be self-system, social system, or cultural system, through the utilization of scientific knowledge" (p. 3).

The emphasis is on how change is created, implemented, evaluated, maintained, and resisted. The authors emphasize the role of the change agent, examining the relationships between the change agent and client and among change agents.

METHOD

The ideas in this book are based on the broad experience and observations of the authors.

FINDINGS AND CONCLUSIONS

1. *The Roots of Planned Change.*

(*a*) The authors trace the development of 20th century man's ability to control, direct, and manage social change. They describe the need for a valid framework for an applied social science and suggest the following: (1) An interdisciplinary applied social science that takes into consideration the behavior of persons operating within their specific institutional environments; (2) an applied social science capable of accounting for the interrelated levels within the social change context; (3) an applied social science that includes variables the practitioner can understand, manipulate, and evaluate; (4) an applied social science that in specific situations can select from among variables those most appropriate to a specific local situation in terms of its values, ethics, and moralities; (5) an applied social science that is pluralistically "real," accepting the premise that groups and organizations are units that are amenable to empirical and analytical treatment; (6) an applied social science that can take into account "external" social processes of change as well as the interpersonal aspects of the collaborative process; (7) an applied social science that includes propositions susceptible to empirical test, focusing on the dynamics of change.

(*b*) The authors concentrate on the change agent, contending that a client system must build into its own structures a vigorous change agent function in order to develop the capability to adapt to a continually changing environment.

2. *Conceptual Tools for the Change Agent: Social Systems and Change Models.*

(*a*) The readings in this section deal with social systems in stability, change and conflict; the small group and change; characteristics of other client systems; and some strategic leverage points that can be utilized in planning change campaigns. The system is used as a focal point because it emphasized the functional interrelations between the parts of a client, be the client a person, group, organization, or culture. The small group is an important element in the larger social system and an important influence on the individual. Many studies point to the small group as a major tool for all change agents in achieving changes. Because the concept of self is relatively accessible for scrutiny, analysis, and change by change agents, the authors explore the studies dealing with the self and change. A role is the behavioral patterns expected and enacted in a social interaction, and combines aspects of personality with the social settings in which people operate and with the organized structures and larger systems of which particular social settings are a part. Role is the major bridge for interrelating ideas from the psychology of individuals and the sociology of groups.

(*b*) The community and organizations are focused on in the latter part of this section.

(*c*) The final portion of this part of the text is devoted to an analysis of some of the variables that have proven to be important factors in decisions change agents make concerning the avenues they should take in promoting change. These variables can be categorized under the headings of *motivation*, *communication*, and *power*.

3. *Dynamics of the Influence Process.*

This part of the book attempts to capture some of the theoretical and practical significance of the influence process for the study of human change. *If change is to occur influence must occur.* The authors concern themselves with the following issues: (*a*) Institutional arrangements for influence, (*b*) purposes of influence, (*c*) kinds of influence processes, (*d*) dialectics in the influence process, and (*e*) response to influence.

(*a*) The kind of institution determines to a large extent the dynamics of influence. The degree to which the institution serves as a barrier to social intercourse with the outside dictates the amount of control the institution wields on the individual members. The degree to which the organization or institution provides cognitive clarity as to the nature of the relationships between the individual and the organization is still another important factor in the influence process.

The three institutional variables that appear to be important are: (1) The degree to which the institution is total, (2) the degree to which the relationship between the individual and the institution is voluntary, and (3) the degree to which the institution's main goal orientation is indoctrination or change.

(*b*) The authors propose the following as a paradigm for examining influence goals: Cognitive, affective or emotional, and motoric dimensions on one axis and methodological and content categories on the other.

(*c*) There appears to be not one kind of influence, but several; and of these, some are strongly internalized, others not; some unconscious, some not; some are adopted out of fear and intimidation, others out of reality considerations.

(*d*) The dialectics considered by the authors are: (1) the dialectic between cognition and experience, (2) the dialectic between necessity and desirability, (3) the dialectic between self and other, (4) the dialectic between knowledge and action. The last of these is probably the most relevant for those interested in securing the utilization of research.

(*e*) The response to influence seems to take two basic forms: Conformity and revolution.

4. *Programs and Technologies of Planned Change.*

(*a*) Some specific planned change programs are explored in this part of the text. Three pivotal functions in planned change are explored: Training, consulting, and applied research. These functions were chosen because consulting leads to adequate diagnosis, training to internalization of prerequisite kills, and research to evaluation of the two prior steps.

(*b*) The main question related to training is: How can a training program provide an opportunity in which individuals can learn new behaviors, new perceptions, new orientations—which may require some isolation from the everyday pressures of the organization—and still have the learnings feed back into the organization?

(*c*) How does the consultant (a stranger) help bring about change in an existing social system? Focusing on the problem of the client, rather than on the client, the consultant plays an advisory role and does not have to implement a plan to solve the problem. The role of the consultant-trainer appears to reduce the gap between diagnosis and action and provides what appears to be a reasonable answer to the questions raised dealing with the transferability to the action setting.

(*d*) The relationship between the researcher and the organization under study is considered. Applied research is analyzed in terms of a complex of relationships: Between the applied science and scientific method; between the applied scientist and his subjects; between the organization and subjects turned clients.

Comment by Reviewer

The readings provided in this book can be very useful to those undertaking the introduction of change mechanisms into ongoing systems. Research utilization can be viewed as a change i current system practices.

The information contained in this book presents ways of approaching the change situation. The focus of the book is planned change, and while this is relevant, it is not totally on target. The problem of research utilization is only lightly touched on in this text and none of the articles addresses itself to how we can make better use of what we know.

This is a reference book that can provide many leads on research that needs to be done on planned change, but it presents little in the way of "documented" findings on research utilization.

ORGANIZATIONAL CHANGE
ANALYSIS

Bennis, W. G., and Schein, E. H. Principles and strategies in the use of laboratory training for improving social systems. In W. G. Bennis, K. D. Bennis, and R. Chin (Eds.), *The planning of change* (2d ed.) New York: Holt, Rinehart & Winston, 1969, pp. 335–357.

PURPOSE

The authors undertake to explore the ways in which the training laboratory can serve as an instrument to aid organizations in meeting the tasks of adaptation and collaboration.

METHOD

The method is primarily analytical, with the authors drawing on their own extensive experience in the field. Three case studies are cited, but they elaborate the principles developed here, rather than serving as the basis for those principles.

FINDINGS AND CONCLUSIONS

1. The suitability of a training laboratory for any specific organization can be assessed in terms of the state of the target system at that specific time. This involves such considerations as:

(*a*) Are the learning goals of laboratory training appropriate? Are the outcomes relevant to the effectiveness of the target system? Is laboratory training timely, economical, congruent with the anticipated trends of the target system?

(*b*) The values of the target system should not clash too violently with the values of laboratory training (authenticity, choice, collaboration, expression of feelings). Some of the dimensions of the "cultural state" of the target system:

(1) Interpersonal relationship should be considered legitimate by management —neither irrelevant nor frivolous nor an invasion of privacy.

(2) If the control and authority system presently employed by the target system is too rigid and authoritarian, this may conflict seriously with the values of laboratory training.

(3) It is best not to introduce laboratory training in a target system which is in the throes of intense conflict.

(4) If laboratory training is applied only to a subsystem, repercussions elsewhere in the target system can be anticipated. The internal boundary system of the target system must be kept in mind.

(5) If laboratory training is to be introduced, the target system must have a healthy, realistic understanding of the role of the change agent.

(*c*) Key people in the target system must be informed about and involved in the training laboratory.

(*d*) Members of the target system must be adequately prepared for and oriented to laboratory training. This preparation should be experiential rather than verbal (pilot projects, trial runs, etc.).

(*e*) Participation in laboratory training must be voluntary.

2. Several models for the change agent are explored:

(*a*) He can be external or internal. The external change agent has the advantage of detachment, perspective, and energy not drained off by other duties. The internal change agent has the advantage of intimate knowledge of the target system, and of not generating mistrust and suspicion.

(*b*) The source of the change agent's power is a combination of expert power (skill, competence) and line power (status in the organization which legitimizes his influence).

(*c*) The authors state that the most common model is that of the external change agent employing expert power: the consultant model.

3. The role of the change agent includes the following elements:

(*a*) He is a professional, guided by certain ethical principles, and acting in the client's interests rather than his own.

(*b*) He is marginal, without formal membership in the target system and often without the immediate supporting presence of colleagues.

(*c*) His role is ambiguous, not widely understood, often lacking in legitimacy and credibility, sometimes viewed with suspicion and hostility.

(*d*) His role is insecure. He may be considered expendable; there are few guidelines for his actions; he is almost certain to encounter resistances.

(*e*) His role is potentially risky—both to the target system and to his professional status.

4. The competence of the change agent should encompass: Conceptual diagnostic knowledge cutting across all behavioral sciences; knowledge of theories and methods of organizational change; knowledge of sources of help; orientation to the ethical and evaluative functions of the change agent's role. He should possess operational and relational skills, must recognize his own motivations, act in a manner consistent with the values he is attempting to impose on the target system. "The change agent must not impose democratic or humanistic values in an authoritarian or inhuman manner" (p. 346).

5. Strategies for the implementation of laboratory training include the following considerations:

(*a*) In the course of the training experience, the identity of the client shifts and oscillates—from organization to specific group to particular individual within the group.

(*b*) The point of entry is often top management, with the assumption that change will percolate down; in some organizational situations, however, it is less risky to enter at lower levels.

(*c*) The interdependencies of the subsystems within the target systems must be carefully worked out.

(*d*) The change agent should attempt to involve the target system in planning and goal setting for the change program.

Comment by Reviewer

This paper is of particular interest because of the insights it provides concerning the functions of the change agent.

RESISTANCE TO CHANGE

ANALYSIS AND SUGGESTIONS

Berlin, Irving N. Resistance to change in mental health professionals. *American Journal of Orthopsychiatry*, 1969, 39, 109–115.

PURPOSE

In this article the author discusses what he feels to be some of the major factors inhibiting change in mental health practice. He suggests some possible ways in which this resistance can be overcome.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. The following factors are cited as producing resistance:

(*a*) *Personal satisfactions.*—The author feels that one's personal satisfactions in the mental health professions depend upon "having learned a certain body of theory and practice and becoming fairly proficient in its use." Experience with learned techniques leads to proficiency and comfort which would be endangered if individuals were to initiate new theories and techniques. According to Berlin personal satisfaction is likely to decrease during the initiation of innovation practices.

(*b*) *Money and status.*—The money and status accorded a mental health professional who uses tried and true techniques becomes endangered if he champions new techniques. Most clients prefer time-tested techniques to innovative practices not yet "proven" totally successful.

(*c*) *Uncertainty.*—The theories and assumptions behind most innovations in the mental health field are usually neither explicit nor carefully tested in practice. These unknown factors produce an uncertainty about use which most mental health professionals would rather forego than face. "Uncertainty is anxiety provoking, questioning of our basic premises is threatening and evaluating our work so we can continue to learn and grow is frightening."

Somewhat related to the uncertainty syndrome is the fear of discovery that one is not as competent or effective as one had hoped. This also prevents experimentation with innovation.

(*d*) *Tendency to guard old statuses.*—Berlin suggests that changes can often result in an alteration of status which in turn is threatening. The use of subprofessionals is an example of a status-altering change that has proved threatening to many mental health professionals.

2. Three suggestions are offered for overcoming resistance to innovation in mental health professionals. They are:

(*a*) *Community involvement.*—Through participation in community action projects the mental health professional may be forced to reexamine his methods and techniques for dealing with mental health problems. Community involvement gets him out of the office and into the "real world."

(*b*) *Pilot programs.*—Through involvement in pilot projects the mental health professional is given a somewhat "anxiety free" situation to experiment with and practice new techniques. Pilot programs can be helpful for developing theoretical understanding of new ideas.

(*c*) *Group discussions.*—Regular meetings of mental health professionals in which they can discuss relevant new ideas may provide necessary support for actual experimentation.

Comment by Reviewer

This article is particularly useful because it looks at the problems of change specifically within the context of mental health agencies.

INNOVATION DIFFUSION THEORY

Bhola, Harbans S. *A configurational theory of innovation diffusion.* Columbus, Ohio: Bureau of Educational Research, College of Education, Ohio State University, 1965.

PURPOSE

The theory presented in this paper is designed to explain the process of innovation diffusion and to predict success or failure of innovation diffusion plans and projects.

METHOD

The author has based his analysis on his own knowledge, experiences, and observations.

FINDINGS AND CONCLUSIONS

1. The configurational theory of innovation diffusion can be stated as a function (f) symbolized as: $D=f(C_{ij}LER)$. Diffusion (d) of innovation is a function (f) of the Configurational (C) relationship between the Initiator (i) from a class of such initiators and the Target (j) from a class of such targets; the extent and nature of Linkage (L) between and within configurations; the environment (E) in which the configurations are located; and the resources (R) of both the initiator and target configurations.

2. Configurations are social units within which individuals play a variety of formal and informal social rules. These roles may be played by individuals in groups, in institutions, or in cultures. An initiation configuration acting on another target configuration together make a configurational relationship, symbolized by C_{ij}.

3. Linkage is communication. Two configurations are in linkage when they are in communication with each other.

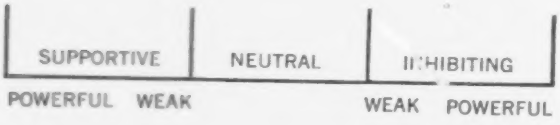
4. Bhola adapts Guba and Clark's theory into action model by adding another phase after implementation called service and support (see fig. 1). Bhola sees diffusion carried through the

Figure 1.—Change in a social process field

	Research	Development	Dissemination	Demonstration	Implementation	Service and Support
Objective	Advance knowledge.	Apply knowledge.	Distribute knowledge.	Build conviction.	Facilitate action.	Consolidation of adoption.
Criteria	Validity of knowledge produced.	Feasibility Performance.	Intelligibility Fidelity. Comprehensiveness. Pervasiveness.	Credibility	Effectiveness Efficiency.	Generalizibility. Acceptibility. Accessibility.
Relation to change.	Provides basis for innovation.	Produces innovation.	Informs about innovation.	Promotes innovation.	Incorporates innovation.	Integrates innovation.

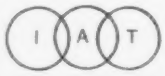
implementation phase as functional diffusion. It becomes total diffusion when carried through the support phase.

5. The environment in which diffusion takes place can be supportive, neutral, or inhibiting.

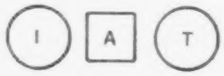


The supportive and inhibiting environments can be either weak or powerful.

6. Bhola suggests that the initiator (I) and target (T) configurations may need an articulating force, an adapter (A) that either overlaps or bridges the gap between the initiator and the target.



overlapping



bridging

7. The resources necessary for innovation diffusion are: Material resources, resources of conceptual skills, resources of personnel, and resources of influence.

Comment by Reviewer

This paper outlines a diffusion model in very succinct terms. Its orientation is primarily theoretical.

RESPONSE TO INNOVATION
EVALUATIVE STUDY

Blum, R. H., and Downing, J. J. Staff response to innovation in a mental health service. *American Journal of Public Health*, 1964, 54, 1230–1240.

PURPOSE

This paper was developed to shed light on the following questions: What varieties of professional response to innovation must be anticipated and under what conditions is a given response most likely to occur? How can change be introduced so as to minimize resistance? If resistance to change occurs, is the administrator more likely to achieve his goals by increasing coercive pressures or by yielding to some degree in the face of determined staff opposition? Just how should the psychiatric administrator go about introducing change and what can he expect as a result?

METHOD

The setting for the study was a county (San Mateo County, Calif.) in which three administratively autonomous mental health services were centralized in one division and put under the direction of a newly created administrative section. Three innovations were introduced to achieve the following goals: Immediacy of treatment, continuity of care, diversity of treatment, more efficient use of staff time, improved recordkeeping, and systematic evaluation. Each of the three innovative activities were introduced in a different setting and in a different manner, ranging from high to low degree of central control and coercion.

1. A new treatment team in the adult unit was initiated without support or approval of the chief of service, and outside personnel were brought in to staff it. This new team differed markedly from the parent unit in its work patterns.

2. A new treatment team in the child guidance clinic was completely integrated with the ongoing program and the chief of service, though he had some initial resistance, was given full responsibility for the new unit.

3. The third innovation was an alcohol unit, a new service with a new staff; no coercion was involved in its installation.

The response of mental health professionals to these innovations was measured by the following instruments: Records of complaints and terminations, records of activity and efficiency, a questionnaire to all staff members shortly after plans for the innovations had been announced, a questionnaire 1 year after the new programs were underway.

FINDINGS AND CONCLUSIONS

1. Staff temptations were most frequent in the service that experienced the most forcibly imposed change (the special treatment team in the adult clinic).

2. In the administrator's judgment, there were more staff complaints and special administrative problems in this same service unit during the 12 months following the innovation.

3. There was a greater timelag in the adult clinic than in the other new services between staffing and the delivery of services.

4. Response to the initial questionnaire indicated that the new treatment team in the adult clinic had the most intense emotional reaction to the innovation and were particularly suspicious of the "real" motive of the administrator in making the change.

5. Response of the 1-year-later questionnaire indicated that much of the hostility toward the innovation on the part of the adult clinic team had subsided.

6. On the basis of the foregoing findings, the authors conclude: The intensity of the negative reaction of professionals appears related to the extent to which the power and prestige of local service chiefs are threatened, the extent to which control is taken out of their hands, the extent to which existing informal work relations are disrupted, and the extent to which existing informal work relations are disrupted, and the extent that coercive pressures are applied to require marked deviations from traditional procedures.

7. Despite its resistance to change, the innovative team in the adult clinic was more successful in achieving the goals of the innovative approach than were the other two units; the fact that they had the aid of outside experts contributed to this. Conclusion: Goals can be achieved in spite of staff resistance, providing administrative support, and sanctions are firm.

8. At the end of a year, the innovative treatment teams in both the adult and children's units elected to dissolve, and personnel of both teams were reabsorbed into their respective parent units. Peer pressure plus lack of tolerance for autonomy were significant factors in their decision to disband.

9. The adult team had a greater impact on its parent unit after reabsorption than did the children's team; it should be remembered that it departed more drastically from traditional procedures. In short, the innovation which produced the *most resistance* and the greatest disruption was the one which best achieved its goals and which was *most copied after its successful operation.*

Comment by Reviewer

The authors point out that their findings are consistent with observations of sociologists and of social and industrial psychologists. This paper is, however, more than an echo. It is an extremely relevant presentation within the context of innovation in the mental health field. Considering the emphasis which is traditionally placed in overcoming resistance to change, there is significance in the authors' report that resistance does not necessarily (nor permanently) interfere with the improvement brought about by a desirable change.

PLANNED CHANGE

ANALYSIS AND SUGGESTIONS

Bobbe, R. A., and Schaffer, R. H. Mastering change: Breakthrough projects and beyond. *American Management Association Bulletin*, 1968.

PURPOSE

A prescription for achieving change.

METHOD

The ideas in this article are based on the broad experience and observations of the authors.

FINDINGS AND CONCLUSIONS

1. There are five characteristic responses to the need for change:

(*a*) Concentration on preparing for a change.
(*b*) Delegation of organizing and carrying out change to consultants or to staff.
(*c*) Focusing on one element of change alone.

(*d*) Deferring action for a more auspicious time.
(*e*) Major surgery.

2. These responses are all inadequate either because they take too little action too slowly or too much action too hastily. The only reasonable approach is a gradual expansion of management's capacity to carry out change while also performing their present job. In industry, this approach characterizes organizations which survive and prosper for generations.

The essential ingredients in this strategy are:

(*a*) Developing achievable breakthrough projects.
(*b*) Giving written assignments.
(*c*) Requiring written work plans.
(*d*) Instituting innovative action.
(*e*) Providing methods for reviewing and controlling the work.
(*f*) Instituting steps to create an expanding sustaining process.

3. An elaboration of these steps follows:

(*a*) *Breakthroughs.*—A breakthrough project should respond to an immediate need of the organization. It should be achievable with the current resources of the organization. It should be a tangible step toward key long-range objectives.

(*b*) *Written assignment.*—It should contain at least the following elements: A general statement of long-term objectives; a clear definition of the assignment with specific responsibilities; a request for a work plan outlining specific steps; a detailing of resources and methods available; specific measures of progress; checkpoints and completion dates; methods of reporting progress.

(*c*) *Written work plan.*—This outlines how the individual or group intends to accomplish the goals. It should include specific steps in the assignment, names of those responsible for each step, dates by which each step is to be completed, clear statements of how performance of each step will be measured. This is the action phase of the initial planning written assignment.

(*d*) *Instituting innovative action.*—Success here requires people to experiment with new ways of collaborating to plan work and get it done. Often, task forces which repair to an extra-work setting to get the project started are desirable.

(*e*) *Reviewing.*—Reviews should be periodic, keyed to checkpoints in the work plans. Informal review sessions might well occur more frequently than formal reviews. When roadblocks are encountered, as they always will be, methods of dealing with them must be developed; this leads to the next stage of expanding the process.

(*f*) *Expanding the process.*—The assignment may need to be reshaped or added to; the time dimension may need to be altered; the manager may need to expand his control. The whole move toward creative, innovative management can be fostered by adding projects related to the initial breakthrough project. Involving other departments and other people over the course of time also fosters this innovative process. The authors cite the example of a community hospital that had come to a standstill because its doctors, administrators, and trustees could not collaborate. To help overcome this, projects were organized around three problem areas where all agreed action was needed. A task force with representatives from each group were given written assignments. All groups made useful progress and gained positive experience in working together. It was felt the logjam had been broken; however, nobody did anything to take the next step, and over time the momentum faded and the old frictions reappeared. Luckily, one trustee seized the initiative and got the hospital leadership together to plan the next steps, which were to move into tougher, more far-reaching decision areas in the same task force method involving more people. This procedure of selecting increasingly ambitious goals did, in fact, move the hospital to a creative stance. Success fosters success.

Comment by Reviewer

The emphasis on concrete, specific, written plans for change is commendable.

MARGINALITY AND INNOVATION

CASE STUDY

Borman, Leonard D. The marginal route of a mental hospital innovation. Paper presented at the annual meeting of the Society for Applied Anthropology, Lexington, Ky., April 1965.

PURPOSE

Borman analyzes the effects of a marginal* population introducing an innovation to the more influential and socially accepted members of a social system.

In essence that is a report of a case study which involves an innovation (a novel form of a patient council) which was initiated in a mental hospital by socially marginal professionals (members of the recreation and anthropology departments). The groups of patients through which they initiated their innovation were also marginal in that they were considered backward and chronic.

METHOD

Observation seems to be the principle method used in gathering information for analysis. The author describes the "nonthreatening" manner in which the patient councils were introduced and the processes involved in moving the innovation from marginal acceptability to system acceptability.

FINDINGS AND CONCLUSIONS

1. The innovation was introduced among the "discarded" patients so that this would not pose a serious threat to the customary values and practices of the hospital. Since to many the patient council appeared to resemble play activities, few of the "prestigeful" professionals attended patient council sessions.

2. Four processes played important roles in transforming this marginal innovation to one of higher regard and acceptability.

(*a*) Shortly after the initial patient council the chief of the recreation department encouraged the spread of patient councils throughout the hospital. The chief prodded all recreation specialists to establish these councils. Eventually a hospital-wide advisory council was established, with weekly meetings. This council further served to stimulate other wards and units to adopt the innovation. Since it was still perceived as a play activity much of the threat that often accompanies an innovation was reduced.

(*b*) Eventually the research interest in patient councils and the resulting activities stimulated further acceptance. The university students involved in researching the effects served a linking function, in that they made the innovation understandable to others in the hospital.

(*c*) Many of the hospital staff were disillusioned with some of the arrangements for treating and organizing the care of patients. (A felt need for improvement was obvious.) Patient councils helped to symbolize one kind of resolution to some of the dilemmas; thus more interest was stimulated.

(*d*) The patient council innovation also became more important through its identification with the outside therapeutic community movement. The local patient council innovations became identified with this outside movement in two ways: (1) Through the distribution within the hospital of literature drawn from the larger movement, and (2) through consulting visits and lectures by many of these same professionals.

3. Borman stresses the importance of the role the researchers played in this case study. Their rather undefined roles made it possible for them to communicate freely with all segments of the hospital bureaucracy. They played a vital role in gaining system acceptance for the innovation.

Comment by Reviewer

The marginal route to research utilization is one avenue that is open. This article does not make clear whether this is likely to be the most efficient route. The study does support the need for a linking function within large organizations between the various units to insure that applicable innovative practices in one unit get transferred to other units.

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*Marginal individuals are those who are perceived as deviating from the norms of a given system.

CONSULTANT ROLE

ANALYSIS AND SUGGESTIONS

Bowman, Paul H. The role of the consultant as a motivator of action. *Mental Hygiene*, 1959, 43, 105–110.

PURPOSE

Bowman examines the various methods of motivation used by the consultants to a 10-year community research project in which the role of the consultant was a central variable. He explores the successes and failures of the various methods of motivation and suggests optimal uses for the different methods.

METHOD

The author's observations and opinions are based on his field experience.

FINDINGS AND CONCLUSIONS

1. Bowman sees two basic functions for the consultant—

(*a*) the knowledge function which involves analyzing problems and bringing resources to bear that can help in the solution thereof; and,

(*b*) the motivation function which involves helping individuals define their problems, mobilize their own resources, and carrying out action programs.

2. The following motivational methods are based on external factors:

(*a*) *Authority method.*—The authority of a consultant comes from the support of influential peoples and the informal authority of his position and status. It is based on acceptance of the consultant by the power structure of the community. Motivation through exertion of authority is usually most evident in the initial phases of project development.

(*b*) *Emotional contagion method.*—This method of motivation stems from the enthusiasm of highly involved individuals. These individuals act as catalysts and stimulate the enthusiasm and involvement of other community members. The author does not see emotional contagion as a manipulable type of motivation, but rather as a natural expression of feelings toward the goals and objectives of the project.

(*c*) *Reward and punishment methods.*—Either rewards or punishments can be used as motivating forces. Punishments were not utilized in this project. Several different types of rewards were employed. Academic course credit was offered as was aid in helping local schools obtain grants, recognition of work accomplished in the form of scholarships, invitations to speak at the university, and coauthorship of forthcoming articles. The author warns that the reward can become more important than the goals.

3. Internal sources of motivation can also be tapped. This method appears to be primarily related to aiding individuals assess their own needs. Opinion surveys and demonstration activities were mentioned as possible tools for helping individuals see their own problems and needs and possible solutions to them.

Comment by Reviewer

Limited but pertinent.

INNOVATION PROCESS

CASE STUDY

Brickell, Henry M. State organization for educational change: A case study and a proposal. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 493–531.

PURPOSE

This article deals with the second of two related studies, with a brief introductory comment about the first. The two studies comprised: (1) An inventory of new instructional programs being used in elementary and secondary schools in New York, and (2) an analysis of the dynamics of instructional innovation. They were to lead to recommendations for statewide action to accelerate the pace of change, and to improve its direction, without diminishing local control of education. Both studies focused exclusively on innovations which require significant shifts in the normal arrangement of six major structural elements of a school: teachers, students, subjects, methods, times, and places; e.g., television, team teaching, ungraded classes. The findings of both studies apply to instructional programs of that type rather than to classroom practice.

The first study determined that while the rate of innovation doubled within the 15 months following Sputnik I, the great bulk of schools as structured institutions had remained stable and unchanged. The second study set out to discover the reasons for that structural stability, to identify any forces powerful enough to loosen it, and to suggest a new pattern of State organization which would make the modification of instructional arrangements rational, rapid, and continuous.

METHOD

The writer conducted unstructured interviews in 31 public school systems of all types and sizes in New York, and five selected districts in other States. He visited approximately 100 schools and 1,500 classrooms. He visited 13 college and university schools of education, nine regional college-affiliated school study councils, the New York State Education Department, schools of medicine and agriculture, and a wide variety of professional, commercial, and school-related citizens' organizations. The findings and recommendations which follow depend entirely on these interviews for their support.

FINDINGS AND CONCLUSIONS

1. The key conclusion drawn is that the design, evaluation, and dissemination of innovations are three distinctly different, irreconcilable processes. The circumstances which are right for one are essentially wrong for the others.

(*a*) The design state requires a specially prepared environment which would not be found normally: A group of highly intelligent people; a limited problem; adequate time, money, and resources; and the freedom to experiment with new methods.

(*b*) In the evaluation stage, rather than freedom to experiment, the evaluator needs to be able to control, or at least to assess accurately, those forces which might influence the success of the new approach.

(*c*) The dissemination stage calls for an "everyday" situation, in which the observers may see clearly that the new approach will be effective in their own schools and communities. Anything which the observer could label "abnormal" or "unrealistic" is sufficient to rob the observed program of persuasive effect.

2. Friction is common among people concerned with innovation (e.g., between the State men managing the education department's fund for local experimentation and the local men spending it).

3. The conclusion reached from adding (1) and (2) above is that failure to distinguish the three phases of change is the most formidable block to instructional improvement today.

4. The distinctions between design, evaluation, and dissemination are better recognized and separated in medicine, agriculture, and industry than in education.

5. The process of local educational change is

determined by the relationships between and within two groups: (*a*) The public and the board of education, external to the institution; and (*b*) the administrators and teachers, internal to the institution. Rearrangement of the structural elements of the institution depends almost exclusively on administrative initiative, because that is the source of authority.

6. Classroom teachers can make only three types of instructional change in the absence of administrative intervention: (*a*) Change in classroom practice, (*b*) relocation of existing curriculum content, (*c*) introduction of single special courses at the high school level.

7. Few new instructional programs are invented in any school system. Most local changes involve adopting or adapting something the neighbors are doing.

8. Suspicion is widespread regarding the worth of innovations in other schools; the most persuasive way of learning about an innovation is that of *visiting* a successful program and observing it in action (see 1–c above).

9. The most successful innovations are those which are accompanied by the most elaborate help to teachers as they begin to provide the new instruction.

10. Except for their role in training teachers, the colleges and universities have little influence on instructional innovation in elementary and secondary schools.

11. Commercial organizations, such as textbook publishers, are extremely powerful. When they promote an instructional change, a great wave of influence sweeps the schools. On the other hand, once they begin to market a given product, they serve as powerful inhibitors of further change, because they seek volume distribution and repeated sales of the same product.

12. *Outcome.* The report on the dynamics of instructional innovation concluded with a new plan for State organization, based entirely on the findings presented in this article.

(*a*) The recommendations made two basic assumptions: (1) That the solution would have to be accomplished largely with the people and the funds already available; and (2) that the factors influencing instructional change could not be altered appreciably, and that they would have to be guided, not opposed.

(*b*) The plan was set up to use generalists to fill long-range permanent positions and specialists to fill short-term temporary positions. The heart of the proposal was that separate circumstances be deliberately created for the design, evaluation, and dissemination of new instructional programs.

(*c*) Dissatisfaction with the recommendations, within 1 year after publication of the report, was evenly distributed among all types of organizations. However, the general reaction of the people who were not strongly identified with the specific existing structures was that although the report was not correct in all its conclusions, it merited very serious study.

(*d*) Some 10 months after the publication of the report, the commissioner of education announced that plans were underway to establish a semiautonomous research unit to stimulate and finance the design and evaluation of new instructional programs and new methodologies in the schools.

Comment by Reviewer

This article yields information concerning barriers and gateways to educational innovation at the elementary and secondary levels, and suggests avenues of approach through existing State organizations for initiating new programs. Although the author's explanations are ambiguous in places, his conclusions appear to be soundly based and of value to workers in the area of educational innovation.

RESISTANCE TO CHANGE
CASE STUDIES

Bright, James R. *Research, development, and technological innovation: An introduction.* Homewood, Ill.: Richard D. Irwin, 1964.

PURPOSE

This book is a compilation of papers dealing with technological innovations. It is intended to provide case studies and examples of the principles of change. The one chapter relevant to mental health is entitled "Resistance to Technological Innovation."

METHOD

In the chapter on "Resistance to Technological Innovation," the author abstracts principles from the case studies. This is not a documented analysis, but a subjective distillation.

FINDINGS AND CONCLUSIONS

1. Major reasons for resistance to change are:

(*a*) To protect social status or prerogative.
(*b*) To protect an existing way of life.
(*c*) To prevent devaluation of capital invested in an existing facility.
(*d*) To prevent a reduction of livelihood because the innovation would devalue the knowledge or skill presently required.
(*e*) To prevent the elimination of a job.
(*f*) To avoid expenditures, such as the cost of replacing equipment, renovating, modifying systems to accommodate the innovation.
(*g*) Because the innovation opposes social customs, fashion, taste, habits of everyday life.
(*h*) Because the innovation conflicts with existing laws or rules.
(*i*) Because of the rigidity inherent in large, bureaucratic organizations.
(*j*) Because of personality, habit, fear, equilibrium between individuals or institutions, status, and similar social and psychological considerations.
(*k*) Because of the tendency of organized groups to force conformity.
(*l*) Because of reluctance of an individual or group to disturb the equilibrium of society or the work atmosphere.

2. The first question in a resistance study is to consider each of the above categories relative to the particular innovation. Then, once you have identified possible sources of resistance, you can consider the means useful to minimize resistance.

3. The following recommendations for introducing change are made.

(*a*) Minimize threat, since resistance will be in proportion to the threat people feel.
(*b*) This would thus suggest that innovations should be introduced in stages since resistances are lessened if only slight changes are required.
(*c*) Innovations should be made in places where people are accustomed to frequent changes.

Comment by Reviewer

The observations suggest factors in the environment that one attempting change should be aware of.

CHANGE STRATEGIES
ANALYSIS

Burke, Edmund M. Citizen participation strategies. *Journal of American Institutional Planners.* September 1968.

PURPOSE

This is a rational discussion of five strategies of change.

METHOD

The ideas in this article are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

Effective change strategies require knowledge and skill in handling the dynamics of individual and group behavior. While seeking to maximize rationality, the staff has to be sensitive to individual differences, involve people in organizations and encourage them to participate in order to allay their fears, gain their advice and seek their cooperation. Five strategies of change may be identified:

1. *The education therapy strategy* in which participation focuses upon the presumed need for improvement of the individual participants. In this instance, task accomplishment is irrelevant; rather the participants become clients who are the objects of treatment. The problem with this strategy is its inability to accommodate organization demands; the focus is on the means rather than the end. Changes may occur among the individual participants but not be translated into organizational goals.

2. *The strategy of behavior change* which is deliberately aimed at influencing individual behavior in order to change group behavior. The objective is to induce change in a system by changing the behavior of the system's members in general or of influential members in particular. Since people in groups resist decisions imposed upon them, participation in the decision-making process can help them create commitment to new objectives. The awareness of the need for change and pressure for change must come from within the group, from a shared perception held by the members. Facts, data, and persuasion are not enough. If system representatives can influence change in their own reference groups, this strategy is a highly effective model for planned change. Experiments in industry with this strategy have been quite effective.

3. *The strategy of staff supplements* involves the use of skilled volunteers as a supplementary staff. This strategy depends upon the classical notions of rationality and planning about which there is now considerable doubt. The advice of a professional often becomes merely another opinion.

4. *The strategy of cooptation* despite the usual disparaging connotation attached to it, does provide a means for achieving social goals. Groups not normally included in policymaking are given an entree to the decisionmaking arena. This also increases the opportunity for organizations to relate to one another and find compatible goals.

5. *The community power strategy* works best for organizations committed to a cause rather than to specific issues or services. This strategy essentially involves power confrontations. The interpersonal problems in this sort of method usually reduce its effectiveness.

Comment by Reviewer

This article provides more expert support for the desirability of involving group members in efforts to change the group.

INSERVICE EDUCATION IN HEALTH FIELDS

ANALYSIS AND SUGGESTIONS

Cady, Louise L. The philosophy of inservice and continuing education. *Mental Hygiene*, 1968, 52, 456–461.

PURPOSE

This article is a plea for inservice and continuing education in health fields. The author analyzes the current relationships between inservice education and the health fields and then makes a series of suggestions for implementing better inservice programs.

METHOD

The findings in this article are based upon the author's experiences and observations.

The author defines inservice education as "education that is imparted and obtained while one performs the task * * * education for the job with the least practical interruption of performance of the job."

FINDINGS AND CONCLUSIONS

1. *Present Status of Inservice Education in Health Fields.*

(*a*) There is a limited supply of trained individuals. As the most capable are promoted and assume higher duties, gaps in service are created. More and better inservice education is needed to adequately train individuals to assume the responsibilities and duties of vacated positions.

(*b*) Administrators often argue, "Our people are needed to do the job. We cannot spare them. It costs too much to have our staff off a half day each month for education conferences." Mrs. Cady points out that while this may be very true, community changes, changes in need for services, new research developments, etc., all indicate that there must be provisions for on-the-job training. "* * * An employee once trained is not trained 'for always.' "

(*c*) Too many individuals are assigned to jobs for which they are not specifically trained and then left to sink or swim. As a result the job, the work, or both, suffer.

(*d*) Most individuals being "turned out" of the schools are not endowed with the philosophy that education is a continuing process. Individuals should be trained to think of education as something they will continue rather than terminate with graduation.

(*e*) Current inservice training is aimed primarily at individuals assuming new positions. Workers already part of the system are not given the benefits of inservice education. New developments and discoveries are made of which the "old" worker needs to be made aware.

(*f*) Often institutions and agencies are defensive about their images. Inservice education can help such organizations to become insightful rather than defensive about the difference between the agency's self-image and its true image.

(*g*) Often there is an intellectual acceptance by the institution or agency directors of the need for continuing education, but no "arrangements" are made to provide such training. "With no planned direction and supervision, a worker may accumulate year after year of the same experience, with no professional growth or improvement in patient care."

2. *Suggestions.*

(*a*) Exchange programs can be developed within or between agencies to fill training and experiential gaps. "An exchange program cannot only increase competencies, but it may also bring about coordination and continuity of services."

(*b*) Encourage staff attendance at educational meetings. Make specific plans designed to suit the particular needs of each division.

(*c*) Incorporate 15-minute daily or half hour weekly sessions into work schedule. Such sessions should include demonstration and practice with new ideas and techniques.

(*d*) Use available audiovisual materials such as educational television and programed instruction. Condense relevant articles in central offices and relay to workers via tape recordings, records, or telephone.

Mrs. Cady concludes, "In mental health there seems to be two needs: A new pattern for continuing education, and a new use of the materials at hand for such education."

Comment by Reviewer

This article becomes relevant if planned inservice education is viewed as a tool for making current research findings available to mental health workers. The idea of the "condensing" service might be one way of making research findings more palatable for the practitioner.

EVALUATION AND INNOVATION

CASE ANALYSIS

Campbell, Donald T. Reforms as experiments. *American Psychologist*, 1969, 24, 409–429.

PURPOSE

This is a discussion of the ways in which social improvements in a community or in an institution can be evaluated for their effects on a variety of indices. Recognizing that administrators need to make their decisions "look good," Campbell, nevertheless, thinks it is possible to stage reforms in such a way that they can serve as experiments. He discusses some of the common sources of misinterpretation of trends in social indices following a reform and proposes ways in which these misinterpretations can be avoided.

METHOD

Campbell uses the enforcement crackdown on speeders which Governor Ribicoff of Connecticut instituted in 1953 as an illustration of some of the possibilities of evaluation of such a reform and some of the difficulties as well. He takes trends in a number of traffic measures over the period from 1951 to 1959.

FINDINGS AND CONCLUSIONS

1. There was a striking drop in Connecticut traffic fatalities from 1955 to 1956 but it is possible to think of a number of explanations for this besides the enforcement crackdown:

(*a*) *Maturation or preexisting trends in the community.*—It may have been that fatalities were going down anyway and taking one year-to-year segment just capitalizes on a general trend rather than demonstrating the effects of a reform which happened to come in one of the years when the trend was operative. An analogy from mental health would be treatment taking credit for all of the increasing independence we see in young people in the course of their adolescence.

(*b*) *Instability of measures.*—There may be a great deal of variability in the measure to begin with so that year-to-year variations may have less significance. Thus if a number of measures of ward morale go up and down in the absence of any planned change, one would be more cautious in interpreting an improvement in morale consequent upon the introduction of a new patient policy.

(*c*) *Regression effects.*—With an oscillating index the tendency after a high value is toward a lower one, after a low value toward a higher one. The speeding crackdown followed a year of unprecedentedly high traffic fatalities. Applied to mental health, if we take a group of patients at their most depressed and start a new treatment, we should expect improvement, but this improvement may be more a reflection of the regression of mood values toward the mean than any treatment effect.

(*d*) *Instrumentation artifacts.*—Sometimes reforms bring changes in the process of measurement itself. Mental health education may bring about an increase of people seeking treatment, so that if the number of patients per capita is our index of general mental health we may conclude erroneously that the education has *worsened* mental health. This effect is particularly apparent in crime statistics. An upgrading of the Chicago police force in 1959 made for better recording of petty thefts with the results that by this index the reform seemed to have increased crime!

2. To overcome these stumbling blocks in evaluation Campbell makes a number of suggestions.

(*a*) He favors true experiments rather than quasi ones, but recognizes true experiments are not always possible.

(*b*) If a new policy or treatment is to be introduced he suggests randomized selection of the units which are to try it out.

(*c*) Each pilot unit should be matched with a control one and the same measures taken before and after on both. Where this cannot be done it may be possible to have staged innovation within an administrative area so that those units which receive the innovation last can serve as controls for those who receive it first.

(*d*) Where only some individuals receive a treatment he suggests selecting them randomly so that the remainder are a valid control group.

(*e*) Where selection for treatment is based upon prior measures (as, for example might occur with scholastic aptitudes scores in education or with ego-strength measures in psychotherapy) then future achievements or adjustment of the two groups can be compared by a regression discontinuity design which he describes in some detail.

(*f*) It makes little difference whether the best bets are selected—as they are in education—or the worst bets—as they might be in psychotherapy. The design enables the administrator to disentangle the effects of preexisting capacities from the effects of treatment.

3. The article ends with some candid advice for trapped administrators who have to show good results from their innovations.

Comment by Reviewer

The article, though heavy with methodology, shows a keen appreciation of the administrator's position and gives practical suggestions on how he can evaluate the effects of his innovations.

CRITIQUE OF DIFFUSION RESEARCH

ANALYSIS

Carlson, Richard O. Summary and critique of educational diffusion research. Paper presented at the National Conference on the Diffusion of Educational Ideas, East Lansing, Mich., Mar. 26–28, 1968.

PURPOSE

Carlson summarizes and critiques the educational diffusion research done to date, pointing out its deficiencies and areas for future research.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

Adoption is defined as the decision to use a new idea or practice, and diffusion as the spread of a new practice to and among potential users. Carlson maintains that the terms "adoption" and "diffusion" describe only a very narrow slice of the world of change in education. The life cycle of an innovation must consist of the story of the invention, development, promotion, adoption, diffusion, and demise of the innovation, along with an account of the problems encountered and solution developed in introducing and maintaining the innovation in the school setting, as well as the unanticipated consequences growing out of its use. To date most studies have focused only on the adoption and diffusion aspects of the process.

Carlson isolates seven elements in the diffusion process and focuses on current research inadequacies. He points out that no single diffusion study has taken into account all seven elements.

(1) *Acceptance.*—The problems encountered in this area are definitional: What is acceptable as evidence of acceptance? Are reresults comparable? Who makes the decision to adopt? What procedure is followed in the decisionmaking process? Some research on decisionmaking processes in education has been computed, but the need for good descriptive studies of acceptance decisions still remains.

(2) *Time.*—Regardless of the centrality of time in diffusion studies, few adequately identify the time of the acceptance decision.

(3) *The innovation.*—There are two major problems encountered in specifying new educational practices to study in diffusion research: (*a*) The classification of educa-

tional innovations in order to make results generalizable, and (*b*) the definition of what constitutes a new practice.

(4) *Adopting units.*—Most studies of educational diffusion focus on the local school system as the adopting unit, neglecting the individual teacher, and the varying rates among individual schools within a school system. In addition very limited attention is paid to concepts related to organizational theory.

(5) *Communication channels.*—Carlson points out the difference between diffusion studies and adoption studies. Adoption studies deal with who adopts and at what rate. Diffusion studies either study how an innovation spreads, or the extent to which and the rate at which an innovation spreads from its source to and among potential adopters.

Educational studies, for the most part, neglect the fact that communication plays a different role in each of these processes.

(6) *Social structure.*—Communication and social structure are closely linked. Only one educational study involved social structure as an explanatory variable both in terms of adoption and diffusion.

(7) *System of values or culture.*—According to Carlson, no researcher has drawn upon culture or values to aid in accounting for the spread of educational innovations or rates of adoption.

Comment by Reviewer

This paper provides a useful conceptualization of the factors related to diffusion of innovation and serves to point out some of the weaknesses in research on educational diffusion which should be considered in drawing generalizations from that field.

ORGANIZATIONAL FACTORS AND INNOVATION
SURVEY

Carrole, Jean. A note on departmental autonomy and innovation in medical schools. *Journal of Business*, 1967, 40, 531–534.

PURPOSE

The author attempts to determine which of a number of variables are associated with innovation in medical schools.

METHOD

Medical schools were first classified as either innovative or conservative on the basis of curriculum change. To qualify as an innovating school, a medical school must have initiated revision of its curriculum, of broader than departmental scope, between 1959 and 1964. Those not meeting this criterion were classified as conservative schools. From a population of 85 medical schools,* seven were found to classify as innovating schools.

Measures of 18 variables related to size and composition of the student body and of faculty and administrative personnel, to volume and sources of support of research, and to number and location of clinical facilities were secured from all 85 schools.

FINDINGS AND CONCLUSIONS

1. The power structure in many medical schools is changing. In the past medical schools were organized around departments, each with a field of study in the curriculum. For many years department chairmen and certain of their faculty secured research funds and thereby wielded the power. With the entrance of the government into allocation of research funds, a change was made. The funds were allocated to the schools themselves, rather than to departments or individuals. The balance of power, therefore, shifted and departmental autonomy is gradually eroding away in the more innovative schools.

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*The basis of selection for inclusion in the 85 schools surveyed was not mentioned in the article.

2. Innovative schools were found to have the following characteristics:

(*a*) Innovative medical schools have larger faculties than conservative medical schools.
(*b*) Innovative schools had more part-time faculty than conservative schools.
(*c*) Innovative schools had a larger number of departments in the basic sciences and clinical areas.

3. *Author's discussion of Findings.*—The larger faculties of the more innovative schools are more likely to bring a greater number of innovative ideas and practices into being. The larger number of departments within the innovative schools means a greater opportunity for interdepartmental exchanges. The fact that many of the faculty members in the innovative schools are only part time means they are probably more in touch with the happenings in the practical world of medicine and therefore good links between the medical school and innovations being developed in the "real world."

Comment by Reviewer

By stretching some, the factors associated with innovativeness in this paper can be utilized to encourage research utilization by mental health practitioners. Exchanges between departments on current findings and practices could stimulate innovation. Perhaps faculty members from universities could be encouraged to work on a part-time basis in the world of the mental health practitioner. He would bring with him all his knowledge of current research and possibly spread this information among his coworkers helping and supporting any of their efforts to use the findings.

KNOWLEDGE UTILIZATION
ANALYSIS AND SUGGESTIONS

Carter, Launor F. Knowledge production and utilization in contemporary organizations. In T. L. Eidell and J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968, pp. 1–20.

PURPOSE

Concerned with the lack of research payoff to the larger community, Carter highlights the problem, explores the results of four projects that have dealt with research utilization and offers some suggestions on how knowledge can be used in attacking major contemporary problems.

METHOD

The ideas in this chapter are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. *Information Transfer as a National Problem.*—The results of basic and applied research and technological innovation are reported in numerous documents, journal articles, government reports, books, etc. The number of these and the difficulties in making them available for use have been increasing for years. The problems confronting a national document handling system are numerous.

> * * * it seems probable that even if they (national document handling system) were successful, we would still be faced with serious difficulty in implementing the knowledge which has been gained. Frequently, the knowledge available in reports is not easily translatable into practical application. Often the carefully reported results are so narrowly restrained or so confined to the laboratory setting that their implications for real problems are, at best, tenuous.

2. *Projects Dealing With Research Utilization.*—In the last few years several research projects have confronted the problem of moving research results from the library shelf into a functioning role in relevant real world situations.

(*a*) *Project Hindsight.*—Done in the Department of Defense, this research study yielded information that indicated a lack of orderly process from research to development. It was found that 91 percent of events could be classified as science. This finding leads one to the almost inescapable conclusion that if a technical development is to take place and it is limited by current technology, then the way to solve the problem is to directly attack it in terms of the then-known science and advanced technology rather than to hope that basic science will, in any short time period, provide the new knowledge required to lead to a successful system development.

(*b*) *Tacoma Project.*—This study focused on the dissemination of information and adoption of techniques developed during a successful demonstration project. Glaser and his associates studied the efficiency of various methods of communicating the results of this study, and reported the following results.

(1) If promising research or demonstration findings are reported in easily readable, brief and nontechnical form, and are widely distributed to potential users, the chances of their having impact and being used will be increased relative to reporting through a formal report.

(2) If potential users of the research or demonstration findings attend a conference which involves discussion and a site visit, use of the innovative research or demonstration techniques is significantly facilitated, especially if there is an opportunity for conferees to exchange information about their own innovative practices.

(3) A visit by a member of the demonstration project staff to rehabilitation workers who have heard about and seen the innovation further promotes the use of the innovation.

(4) Psychological consultation to management helps the organization change more rapidly and become more open to change.

(*c*) *Traveling Seminar Project.*—The System Development Corp. tested the feasibility of conducting traveling seminars and conferences as a technique for increasing innovation in education. Essentially the treatment consisted of groups of 30 educators visiting selected schools where significant innovations had been introduced and had been in operation for more than 1 year, after which they met for a conference on the dynamics of educational change. The participants expressed great enthusiasm for this technique. The formal evaluation based on informal reports, and a controlled before-and-after interview and questionnaire indicated that participating districts had a higher innovation score than did the nonparticipating districts.

(*d*) *Translating laboratory research.*—Working from the field of psychology, Mackie and Christensen undertook the task of describing the processes involved in translating the results of laboratory research into forms that would be meaningful and useful in operational settings. In their findings they state:

> It was found that the research-to-application process never has properly developed for the psychology of learning. Consequently there have been far fewer applications and much less impact on the educational process than might reasonably be expected. * * * The reasons are believed traceable, in large part, to the research philosophies of experimental psychologists. But it was evident also, that potential users have been reluctant to make the effort necessary to realize the benefits of research findings. * * *
>
> * * * Modern learning research is producing very little impact on educational technology or training practice.

3. *Using Knowledge in Attacking Major Contemporary Problems.*—The points emphasized include:

(*a*) Seek the solution within the context of the problem, rather than hoping that knowledge developed in basic research or in other applied areas will have great application to the particular problem needing solution.

(*b*) The solution to contemporary social problems will be complex and many faceted.

(*c*) Certain critical conditions are essential for the successful attack on any major problem: (1) Appropriate acceptance and motivation on the part of the community, the government, and other involved agencies in recognizing the need for a concentrated effort toward problem solution must be evidenced; (2) there must be a trained, motivated, and experienced staff available for long-term application to the problem; and (3) funding must be made available.

(*d*) The concept of assessment is fundamental to solving significant problems.

(*e*) A new profession of social or educational engineering needs to be developed. There should be a middleman's role between the researcher and practitioner, devoted to solving specific problems.

(*f*) Simple solutions and instant experts are counterproductive.

(*g*) A special problem exists because of the nature of the gatekeeper in contemporary problem areas. Often it is unclear exactly what body is responsible for making a given decision. Too frequently the gatekeeper in education and social areas holds his position due to political abilities rather than trained professional expertise.

Comment by Reviewer

The results from the research projects reviewed are certainly relevant. His suggestions seem consistent with other advice being given.

PRODUCING CHANGE THROUGH GROUPS
SUGGESTIONS

Cartwright, Dorwin. Achieving change in people. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 698–710.

PURPOSE

Since the behavior, attitudes, beliefs, and values of the individual are all firmly grounded in the groups to which he belongs, the author focuses on the group as a medium for achieving change in individuals, showing how efforts to change behavior can be supported or blocked by group pressures.

METHOD

The principles set forth by the author are drawn from research in group dynamics.

FINDINGS AND CONCLUSIONS

In the following set of principles Cartwright suggests ways in which constructive use can be made of group pressures.

(1) If the group is to be used effectively as a medium of change, those people who are to be changed and those who are to exert influence for change must have a strong sense of belonging to the same group.

(2) The more attractive the group to its members the greater is the influence that group can exert on its members.

(3) In attempts to change attitudes, values, or behavior the more relevant they are to the basis of attraction to the group, the greater the influence that the group can exert upon them.

(4) The greater the prestige of a group member in the eyes of the other members, the greater influence he can exert.

(5) Efforts to change individuals or subparts of a group which, if successful, would have the result of making them deviate from the norms of the group will encounter strong resistance.

(6) Strong pressure for changes in the group can be established by creating a shared perception by members of the need for change, thus making the source of pressure for change lie within the group.

(7) Information relating to the need for change, plans for change, and consequences of change must be shared by all relevant people in the group.

(8) Changes in one part of a group produce strain in other related parts which can be reduced only by eliminating the change or by bringing about readjustments in the related parts.

Comment by Reviewer

Groups can certainly be used as one avenue to promoting research utilization among individuals. These principles can be easily translated to the specific problem. For example, research utilization will be encouraged if:

(1) Researchers, change agents, and practitioners can be combined in groups to encourage research utilization.

(2) Strong pressures for research utilization can be established by creating a shared perception by members of such a group of the need for change and research utilization.

INNOVATION ADOPTION
SURVEY AND SUGGESTIONS

Cawelti, Gordon. Innovative practices in high schools: Who does what—and why—and how. *Nations Schools*, 1967, 79, 56–88.

PURPOSE

This study was undertaken to determine the adoption status of 27 important educational innovations. The author attempts to highlight the differences between innovative and noninnovative schools. Finally he gives the reader some insight into how to go about change by having some of the more innovative schools surveyed relate their experience and advice.

METHOD

This was a nationwide survey of accredited high schools; 7,237 schools contributed response.

FINDINGS AND CONCLUSIONS

1. The major findings of the study were:

(*a*) The typical high school reporting in the survey used only six of the 27 innovations listed.

(*b*) The most innovative schools were the large public suburban high schools spending more than $650 per pupil.

(*c*) Schools with larger enrollments tend to have more innovations.

(*d*) The diffusion rate for acceptance of new ideas is more rapid than previous, but still slow.

(*e*) Schools and States vary greatly in their innovative rates, with Connecticut, New York, and Rhode Island being the most innovative States and Arkansas, Louisiana, and South Dakota being the most laggardly. *Cost appears to be a retarding factor* in many cases. However, the study also indicates that certain kinds of administrators seem to facilitate innovation, producing change even when funds are limited.

(*f*) There is still relatively little known about the effects of these different innovations on learning over a meaningful period.

(*g*) The high-abandonment rate for some innovations, such as certain new science and math curriculums, television, programed instruction, and team teaching stresses the need for careful planning before adoption and careful attention during the early years.

(*h*) The haphazard approach to innovation indicated in the responses to the survey, suggest that "Continued and intensified efforts from school administrators will be needed to clarify the change process and to subject new ideas to better scrutiny on a large-scale basis. Schools must develop discrete goals, a system for continuous evaluation, and a willingness to acknowledge weaknesses in planning for change."

2. The author asked several of the most innovative high schools to outline their strategies for innovations and change. Two of these seem particularly relevant.

(*a*) *School No. 1's advice on change.*—Change is a process that takes time. The school offering these suggestions followed a 3-year plan for change. In the first year the necessary structures were changed to accommodate the innovation. The second year was devoted to changing the people involved, primarily through inservice staff training. The third year focused on changing the curriculum and learning materials.

(1) The factors that were felt to be instrumental in making the change effective include: (*a*) Give the teachers plenty of latitude in proposing alternatives. (*b*) Stress the advantages of the innovation. (*c*) Interaction and open exchange of differences on change proposals. (*d*) Use of feedback from teachers and students to locate and correct problems. (*e*) Frequent meetings with teachers and administrators in both large and small groups to discuss problems related to the innovations. (*f*) Intensive efforts to secure financial support for the innovations.

(2) This school found the following to be persistent and pervasive problems related to innovativeness: (*a*) Being innovative is taxing and tiring—everyone has to work harder. (*b*) Teacher morale needs support. They often express feelings that there is too much work, too much change, and too much pressure. (*c*) The innovative school is always in the spotlight. Defenders of the status quo are quick to attack. (*d*) Innovative schools tend to overlook mechanics of efficient administration.

(3) The following advice is given by the school administrators of school No. 1: (*a*) Be prepared to carry out your own inservice program. Use faculty meetings to help teachers. Help is most effective, as is change, when teachers feel the need for it. (*b*) Develop a systematic plan for change. Have a clear idea where you're going and how to get there by clearly defined steps. (*c*) Run an open school. Invite parents, the press, community leaders. Their observations are the best answer to their skepticism. (*d*) Share the wealth. Find ways for teachers to share in benefits of innovation, see that they have appropriate tools, support with praise, see they have time for developmental work. (*e*) Change is most successful when it develops from a base of stability. Be ready for problems—and don't panic when they come.

(*b*) *School No. 2's advice on change.*—These suggestions are directed toward overcoming the rough spots in the change process.

(1) Don't be a plunger. Make changes gradually. Move only as far and as rapidly as your faculty commitment and facilities will allow. It's not necessary for all of the staff to agree to or be ready for change, but you must have a clear conception of what it is you're trying to do, how you're going to do it, and what the ground rules are.

(2) Prepare a position statement setting down the guidelines. Let the staff write it together; involve as many as possible.

(3) Build a program that fits needs and goals, drawing upon other experiences and designs.

(4) Encourage teachers to visit schools that use innovative approaches.

(5) Make sure you are adequately staffed to provide teachers with the individual counseling and support needed during the change.

(6) Get firm support for the entire program from the board of education. Enlist cooperation and support from all departments.

Comment by Reviewer

The practical suggestions on incorporating change and innovation can be easily translated to incorporating research utilization into an ongoing system.

RESEARCH/PRACTITIONER COLLABORATION

CASE STUDY

Chesler, M., and Flanders, M. Resistance to research and research utilization: The death and life of a feedback attempt. *Journal of Applied Behavioral Science*, 1967, 3, 469–487.

PURPOSE

This article is an account of two meetings at which researchers in a school system reported back to school principals about their findings. At the first meeting the researchers were greeted with distrust and skepticism, but the principals asked for additional information which had not been included in the first analysis. The researchers complied and found that in the second meeting they were able to achieve a collaborative relation with the principals.

METHOD

The article analyzed the forces operative in the two meetings and concluded with a summary of the "rules of the game" for such planned interventions.

FINDINGS AND CONCLUSIONS

1. The research was concerned with teacher attitudes and feelings and the ways in which teachers shared information about teaching practices. At the first meeting some principals were wary of the implications teacher attitudes might have about their own performance, they distrusted the researchers and the validity of their data, and they expected clear dicta about how schools should be run to emerge from the research. When the researchers declined to give dogmatic interpretations of their findings they asked for more comparative data about the various schools which the researchers agreed to give.

2. Luckily this beginning of collaboration, some guilt over the hostility which the principals had shown at the first meeting, the superintendent's support, and the completely voluntary nature of the project participation enabled the principals to approach the second meeting with open minds.

3. At the second meeting the researchers stepped off their pedestals, admitted their mistakes and their ignorances, and allowed the principals to share in the planning for how the reporting back should be done. The principals responded with greater cordiality and interest and used the data to extract what would be relevant to them and to help in its interpretation.

4. The "rules of the game" which the authors give apply not only to feedback attempts but to the whole process of research in an applied setting. They suggest four steps:

(*a*) Client preparation and contract formation in which the scientist explains what he wants to do and gains client agreement, exchanges expectations and concerns with the client, and both give up the expectation that dogma will emerge from the study.

(*b*) Establishment of trust in which the scientist explains his own values and his acceptance of the client's, is candid about his personal and professional limitations, demonstrates flexibility in adapting to client needs, and demonstrates that the practitioner can feel safe in dealing with sensitive issues.

(*c*) Demonstration of valued resources in which the scientist presents observations tied to relevant practitioner criteria, in such a way that the practitioner can act upon them with the skilled help of the scientist.

(*d*) Facilitation of autonomy in which the scientist promotes collaboration rather than dependency and gives the client the encouragement and skills to proceed further on his own.

Comment by Reviewer

This article illustrates how difficult time collaboration is for even the skilled behavioral scientist. The "rules of the game" are a useful checklist.

ORGANIZATIONAL CLIMATE
RESEARCH REVIEW

Chesler, M. A., and Fox, R. Teacher peer relations and educational change. *National Educational Association Journal*, 1967, 56(5), 25–26.

PURPOSE

The authors explore and stress the importance of interpersonal relationships within the school as factors in the change process. They feel that the roles of the individual teacher and the faculty peer group in initiating and maintaining the change process have been largely neglected in studies of planned change

METHOD

Convinced that good relationships between the peer group as a whole and the rest of the school structure are essential elements of a healthy climate for change the authors support their contention by reviewing the research completed in this area.

FINDINGS AND CONCLUSIONS

The generalizations drawn from this research review include:

(1) The opportunity for formal and informal associations with colleagues encourages teachers to share their ideas about change. Teachers who serve on committees together or who travel to school together are more likely to know and support each others' innovations than teachers who do not have this kind of association with their fellow workers.

(2) Sometimes the faculty is so organized that it blocks the sharing and dissemination of new ideas. New teachers in a system, fresh from college or advanced training, may enter a school eager to try new ways only to be blocked by an established culture dominated by older teachers who do not welcome the suggestions of new recruits. Similarly, negative evaluations and lack of support from colleagues may hinder any teacher from trying out or continuing personal experiments.

(3) When teachers as a group feel powerless, isolated, uninvolved, and dissatisfied with their roles, they are not likely to instigate change.

(4) Data indicates that teachers need to feel involved and potent in their organization in order to support educational change. They must know that they have the backing of their fellow teachers and their administrators before they are willing to try new ideas.

(5) The authors feel that in order to establish a healthy climate for change we first need to develop ways for individual teachers to share new ideas with other staff members and to gain support for worthy innovations. Further, by adopting new administrative styles which decentralize decisionmaking, teachers can be involved in developing innovations and change.

(6) Inservice programs that go beyond the traditional college extension courses to workshops or laboratories which help teachers perfect problem-solving skills and explore their interpersonal processes are particularly effective means of creating climates for change. Such sessions may focus on openness of communication, emphasize sensitivity to interpersonal relations factors, and analyze the field of forces affecting efforts to change.

Comment by Reviewer

If similar research were conducted focusing on mental health practices, the findings would probably be similar. Therefore, we might generalize that in order to support research utilization among mental health practitioners we must create a healthy climate for innovation and experimentation. The article indicates some of the ways this can be done.

EXTENSION SERVICE
ANALYSIS AND SUGGESTIONS

Clark, David L. The function of the U.S. Office of Education and the State departments of education in the dissemination and implementation of educational research. In K. Goldhammer and S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962, pp. 105–127.

PURPOSE

In this paper, the author advocates an extension service role for the Federal and State Government in order to insure the necessary changes in our educational programs and systems.

METHOD

The ideas in this paper are based upon the insights and observations of the author.

FINDINGS AND CONCLUSIONS

1. Clark compares the diffusion of innovations and information in agriculture with that in education, pointing out that the methods utilized by agricultural departments are clearly more efficient.

(*a*) Years ago, in agriculture, the primary vehicle of communication from the researcher to the practitioner was the printed word, and the impact was slight. Education today is still too reliant on the printed word as the main communication channel.

(*b*) In agriculture two levels were interposed between the researcher and the practitioner: (1) The extension specialist who read and translated research for, and (2) the county agent who in turn made it possible for the farmers to understand its significance for them. The county agent was encouraged to make use of demonstration projects to drive home his points.

2. The author advocates an extension service in education using Federal funds to establish cooperative programs which could result in a nationwide network of experimentation and demonstration centers employing the best that is known about the ways in which change in practice can be effected. "The total cost of such an educational extension service would not be great. If one-half of 1 percent of the total cost of education were devoted to this effort, and much of the expense would be met by redeploying existing resources, the extension service could be initiated and moved ahead at a rapid rate."

3. The extension service is only one way of taking into account the passive or slightly resistant role of many practitioners.

Comment by Reviewer

An extension service in mental health may be one way of bridging the gap between researcher and practitioner.

REJECTION OF INNOVATION
CASE STUDY

Coe, R. M., and Bernhill, E. A. Social dimensions of failure in innovation. *Human Organization*, 1967, 26, 149–156.

PURPOSE

The authors analyze the adoption and eventual rejection of a technological innovation in a community general hospital in order to gain some insights into a system's rejection of a technically sound and successful innovation. They attempt to explain some of the reasons for the failure of a planned change.

METHOD

This study was a before-after longitudinal investigation of the accompanying changes in the attitudes and practices of nursing personnel when a new system of processing medications was introduced at a community general hospital. When the before data was collected none of the nursing personnel nor medical staff had any knowledge that such a change was being planned. On a standardized questionnaire, respondents were asked to evaluate four aspects of the traditional system using a five-point scale, and to answer an open-ended question concerning perceived problems with the present situation. Basically, the same questionnaire was used in the two-data collections that followed the innovation introduction.

The two-phase design for the collection of postdata ascertained information just after the initiation and after an interval of time necessary for it to become routinized. All nurses and visiting and house staff doctors associated with the adoption units were asked to submit questionnaires.

The attitudes of the nursing personnel toward the old system were compared with those of the physicians while it was still in use. The changes in responses from time 1 to time 3, that is, the shifts in attitudes over time after the introduction of the new system, were also analyzed.

FINDINGS AND CONCLUSIONS

1. The baseline data indicated that most personnel were relatively satisfied with the then-existing medications system. (This suggests that one of the elements necessary for successful adoption of an innovation—a perceived need for the change—was missing.)

2. The authors expected that with the passage of time, the positive ratings for the innovation would increase as the resistance to the innovation declined. This did not, however, occur. When the new medication system was introduced, it was initially judged to be better than the old system in two areas: Ordering and procuring medications. The innovation was judged less effective than the old system in two related areas: Distribution and patient safety. The initial preference, eight months later, for the ordering and procuring aspects of the new system had declined significantly, while there was a less noticeable decline in the other two areas.

3. Despite the technical success of the new system, it ultimately failed. Within a few months of installation the system virtually reverted to the process it used some 3½ years earlier. The authors offer several suggestions on why the innovation failed, and why the predicted pattern or response was not found for certain aspects of the innovation.

4. The authors noted several reasons for the innovation rejection; lack of perceived need for change; inability of the new system to meet personnel expectations; and hostile attitudes toward the change agents. The following discussion points are raised in an attempt to explain the adoption rejection process that occurred.

(*a*) *The halo effect.*—Much of the initial approval of the system as a whole may have been due to the favorable response to one aspect of the system, procuring. The fact that the new system was not rejected outright may have been due in part to the favorable response to this aspect of it.

(*b*) *The loss of authority.*—The fact that this innovation disrupted the social organization of the nursing unit and resulted in some loss of authority for the head nurse may be another explanation for its failure. The authors note that in a separate study of the nurses, the head nurses were found to be more change resistant than other nurse respondents.

(*c*) *The false positive.*—The authors suggest that the nurses may have answered the questions the way they thought the interviewers would want, thereby creating a false positive. Members of the planning group were still in direct relations with the nursing personnel at the collecting of time 2 data. The fact that the ratings at time 3 declined after 8 months might reflect that the nurses no longer felt compelled to answer positively.

Comment by Reviewer

This study highlights the importance of perceived need for change in the adopting individuals. The authors make only passing mention of the hostile attitudes of nurses toward the change agents. This was an innovation devised primarily by outsiders, who then attempted to implement it. Perhaps if the hospital staff had been involved in planning the change it may have been successful.

This is basically a good study that is particularly useful to persons interested in innovation at the agency level.

RESEARCH/PRACTITIONER GAP
ANALYSIS

Cohen, Julius. Factors of resistance to the resources of the behavioral sciences. *Journal of Legal Education*, 1959, 12, 67–70.

PURPOSE

The author identifies and briefly discusses three sources of resistance to behavioral science research that are common to practitioners in most fields.

METHOD

The author has based his analysis on his own knowledge, experiences, and observations.

FINDINGS AND CONCLUSIONS

The three identified sources of resistance in practitioners are:

(1) The resources of the behavioral sciences have not been aimed to answer specific and practical problems. The concreteness required by practitioners is often viewed as trivial by researchers.

(2) A feeling that behavioral science resources have yielded findings that are much too unripe and too tentative for reliable use in predicting human behavior.

(3) A fear of inability to cope with the enormous task of mastering these resources and shaping them to his own needs.

Comment by Reviewer

The sources of resistance to research utilization identified by the author certainly must be reckoned with by mental health practitioners. While he offers no suggestions, the issues raised provide impetus for thought. For example, to cope with practitioner fears of the complexity of making research relevant to their practice, inservice education or professional change agents might be incorporated into the system to aid with the translation process.

INNOVATION DIFFUSION
SURVEY

Coleman, J. S., Katz, E., and Menzel, H. *Medical innovation: A diffusion study.* New York: Bobbs-Merrill, 1966.

PURPOSE

This book reports the introduction of a new drug, and its acceptance, through time, among prescribing physicians.

METHOD

Most studies of this kind of process are totally dependent on subjective recollection of adoption. This study is based on actual data (prescriptions written by the physicians during the 16 months following the introduction of the drug) and the determination of the effective social networks operative in terms of friendship, as well as professional patterns of advice, consultation, and discussion.

FINDINGS AND CONCLUSIONS

1. While several channels of influence usually preceded introduction of the new drug, a social intermediary (detail man or colleague) rather than impersonal media (journals, house organs, etc.) was most frequently indicated as the major source of influence.

2. The greater the involvement of the physician in the medical community, the more personal and professional ties he had in the complex network and the more deeply integrated he was in his local medical community, the greater the likelihood of early adoption of the new drug.

3. There were two distinct patterns of diffusion: (*a*) Cumulative adoption by the physicians

well integrated in the medical community resembled the contagion process. (*b*) The constant rate of adoption among those physicians less integrated into the medical community was typical of individual isolated patterns.

4. The "contagion" pattern of adoption varied with the nature of the social interaction. Professional interaction tended to produce similarity of adoption behavior more quickly than did friendship. The analysis of friendship interaction patterns, however, produced greater similarity of adoption behavior than random pairing of physicians in the community.

5. In prescribing new drugs, the doctor must cope with the attitudes of the patient (as is the case with many individuals working in related health fields).

6. There is too much information, often spelled out in too highly specialized idiom for practitioners who are busy practicing to have time to assimilate it.

7. Innovators who first used the drug seemed to be conservative in the degree of prescription, while those who were conservative in time of first use appear bolder in their degree of prescription.

8. Innovators tended to be specialists rather than general practitioners. They were not old, but just as likely to be middle aged as young.

9. The early users, including innovators, were more likely to visit out-of-town medical institutions than the later users. Innovators could more often name an institution outside their community that they looked to as a source of medical knowledge than later users.

10. Innovators also typically had a greater number of different institutions included within their horizon, either as places of past training, or as parts of their current attention span than later users.

11. Early users frequently attended meetings of specialty societies but not general medical conventions.

12. Early users were more likely to subscribe to a large number of medical journals than later users.

13. The innovator was more likely to be highly interested in medicine as a science, and more likely to orient his work to others within the profession than to his patients or other nonmedical people than later adopters.

14. The innovator was also more likely to select colleagues as social companions than was the noninnovator.

15. Sources of information were as follows: 57 percent of the doctors said they first learned of the drug from the detail man, 18 percent learned from direct mail from drug houses, 7 percent named a professional journal, 7 percent another physician.

16. Almost 90 percent of the doctors sought or awaited word from at least one other source before first use, 62 percent indicated three or more sources of confirmation.

17. Two communication channels were used by most physicians before adoption. Information was most effectively carried through commercial channels, validation was most effectively created through professional channels and colleagues.

18. Most doctors went through the same sequence of channels of influence, but at differing rates of speed.

Comment by Reviewer

This study of diffusion, using "hard" behavioral data concerning use of a new medical drug, yields information about characteristics of early and late adoptors and about channels of influence. It suggests certain communication channels and certain target audiences as most likely to lead to adoption of an innovation.

UTILIZATION CONFERENCE
CASE STUDY

Cooper, C. R., and Archambault, B. (Eds.) *Communication, dissemination, and utilization of research information in rehabilitation counseling.* Proceedings of a regional conference sponsored by the Department of Guidance and Psychological Services. Springfield, Mass.: Springfield College, 1968. (In collaboration with Rehabilitation Service Administration, Department of Health, Education, and Welfare. Research grant No. RD-2510-G.)

PURPOSE

The purpose of the conference was to stimulate the interest of vocational rehabilitation administrators and practitioners in the communication, dissemination, and utilization of research results.

This regional conference followed a conference in 1966 held by the Joint Liaison Committee of the Council of State Administrators of Vocational Rehabilitation and the Rehabilitation Counselor Educators on the same subject at which it was suggested that the problems associated with the utilization of research results be studied at regional conferences.

METHODS

The design of the conference incorporated several considerations aimed at maximizing the meaningfulness of the experience for participants and securing long-range results from the effort. The proceedings serve as a case study of this effort.

FINDINGS AND CONCLUSIONS

1. Holding the conference in two parts, each consisting of 2 days, and separated from one another by a period of 3 to 4 months, provides a more meaningful experience for participants than holding a conference for 4 consecutive days.

2. Providing the participants with an opportunity to determine the program for the second part of the conference increased their involvement with the issues being considered.

3. Providing the participants with research materials between the first and the second parts of the conference, relevant to topics in which they had expressed an interest, facilitated the acquisition and reading of research by the participants, and increased their receptiveness to such materials after the conference.

4. Individuals are more stimulated to seek out and to read research reports if their participation at a conference results in their developing guidelines to promote the use of such materials by themselves and by their colleagues in their respective settings than if they are provided with a relatively passive experience.

5. Two assumptions were made in the selection of participants which the authors felt paid off:

(*a*) It was felt that the individuals invited should be persons who had established a fairly effective and extensive horizontal and vertical communication network within their respective settings. That is, participants should be opinion leaders.

(*b*) It was felt that individuals enrolled in graduate programs in rehabilitation counseling should be included as participants as well as individuals employed on the counseling staffs of various State or Federal rehabilitation agencies.

6. A postconference followup which was conducted 2 months after the second part of the conference indicated that participants were favorably influenced by the conference, specifically in terms of more interest in and more reading of research materials. Two State agencies reported projects which they had initiated or hoped to initiate as a result of the conference:

(*a*) One agency started a program wherein staff members are regularly selected to present research in meetings of agency staff twice a month. Specific research is alternatively assigned, chosen, or selected independently by the presenting person. A fourth part consists of communicating to the rest of the staff, selected experiences and how various presentations and/or psychological positions relate to their experiences.

(*b*) Another agency has established a team of interested counselors which is to review certain journals, etc., for research relevant to the work of the agency. The more interesting items will be listed by summary and source in a listing made up every 2 months. In addition, they plan to list at least two research findings in summary form. A smaller group will work with the district supervisor to see what ideas might be implemented.

Comment by Reviewer

Although the followup data is rather weak and less than conclusive, this conference presents some meaningful suggestions for improving the effectiveness of conferences for participants. Although not stressed by the authors, it is interesting to note that the number of participants was not very large (32); this may have contributed to the success of the effort. The two examples of postconference agency programs serve as specific ideas of how an agency might go about improving its "research mindedness."

GOVERNMENTAL CHANGE ANALYSIS

Costello, Timothy W. Change in municipal government: A view from inside. Paper presented at the meeting of the American Psychological Association, San Francisco, Calif., September 1968.

PURPOSE

This paper analyzes the mechanism of change within the context of a political setting. The author prepared the material from his vantage point as deputy mayor-city administrator, New York City.

METHOD

The concepts are formulated partially on the basis of the literature but principally on the basis of Dr. Costello's personal involvement in municipal government.

FINDINGS AND CONCLUSIONS

1. Organizational change is classified as either input or output. Examples of input: Changes in leadership, in structure, in process (technical and social), in resources (fiscal, human, physical). Examples of output: Changed goals, greater effectiveness in achieving goals, more efficiency, better morale, changed relationships with the market (or, in the case of a governmental unit, the service base).

2. There are significant management differences between the public and private sectors which are relevant to the subject of change.

(*a*) Periodic changes in top leadership are more drastic and far reaching in the public sector than the private. (Sometimes this accelerates change, sometimes it delays it.)

(*b*) The products of public agencies (services) are more difficult to quantify than the products of private enterprise.

(*c*) The constituency of a government agency is extremely heterogeneous; this tends to delay the change process and dilute change decisions into compromise.

(*d*) Change in the public sector has higher visibility (hence it is riskier) than in the private sector.

(*e*) Public agencies have less freedom to make their own decisions than do private organizations.

(*f*) Because of the political realities, changes in public organizations tend to be those with immediate and politically visible effects; these tend to be relatively superficial changes.

(*g*) Within a government unit, vested interests quickly build up around existing programs and thus the range of change decisions is narrowed.

3. The following types of changes are cited by the author:

(*a*) *Planned changes*—exemplified in reorganization of governmental structure.
(*b*) *A confluence of force*—the school decentralization in New York City.
(*c*) *Event-dominated change*—the changes in the city's relationship to its employees which emerged from the New York sanitation strike.
(*d*) *Accidental innovation*—the fortuitous modifications of an air pollution control law.
(*e*) *External intervention*—Federal law and Federal money (as in the model cities program).

Comment by Reviewer

The detailed case material with which this paper is embellished has not been summarized here, since it is of interest primarily to the student of public administration. Of broader interest is the author's hardheadedness vis-a-vis the political dimension of change. Since virtually all mental health programs are subject to this dimension, these comments are highly relevant.

ORGANIZATIONAL CHANGE
THEORY AND PRINCIPLES

Costello, T. W., and Zalkind, S. S. (Eds.) *Psychology in administration.* Englewood Cliffs, N.J.: Prentice-Hall, 1963.

PURPOSE

This book presents an application of psychological theory and principles to the business administration setting and the problem of understanding and facilitating organizational change. Only those parts of the book dealing with change are summarized.

METHOD

The concepts in this text are based on a review of research from various subfields of psychology.

FINDINGS AND CONCLUSIONS

1. The following forces operate against a ready response of an organization to the need for changes:

(*a*) Those in the organization who are high enough to initiate change are the ones who have benefited most from the extant order; thus they may be reluctant to change what has worked well for them.
(*b*) The group in charge is likely to be an older group with firmly established ways of thinking and doing business.
(*c*) In the change process the hazards may appear early, the rewards late, perhaps even after the men at the top of the hierarchy are gone.
(*d*) Those men immediately below the top may oppose change. If they do, they may distort data reaching the top. Their resistance may stem from these reasons:
    (1) They may identify with a particular function rather than with the organization as a whole.
    (2) Their role and status relationships in the group may be carefully worked out and they may be threatened by possible disruption.
    (3) The change might eliminate systems they have established.

2. In business organizations there might be readier response to the need for change if older managers were eased into consultative roles and younger managers given increased responsibility for decisionmaking; if creative staff were given the sole job of developing innovative plans and if high need achievement were used as a basis for selecting entrepreneurs.

3. In considering whether to change, three interacting and interdependent forms of change must be analyzed: (*a*) The decision to change can set new overall organizational objectives; (*b*) the decision to change can prescribe changes in the organization itself, in its size, its structure, or its processes; (*c*) the change decision may involve changing significant personnel.

4. *The Administrator as a Reinforcement Agent.*—In his role as a change agent, the administrator is a manager of reinforcement. He must place emphasis on intrinsic reinforcements such as salary and fringe benefits.

(*a*) Positive reinforcement of correct responses is essential. Not only must the reinforcement be appropriate, but the timing and the scheduling of reinforcement is critical. A variable reinforcement schedule related to a man's activity rather than to the calendar would seem appropriate. Reinforcement should be seen as linked to desired performance of change.

(*b*) Punishment, per se, will not work in effecting change. It has the following possible effects: (1) Increasing the occurrence of undesired behavior, (2) causing undesired behavior to last longer, (3) having a short-lived deterrent effect, (4) causing the individual to vary his behavior but not to control the direction of the variability, (5) arousing negative feelings that lead to less desired behavior, and (6) possibly improving behavior by providing negative feedback.

5. The following factors facilitate learning:

(*a*) *Knowledge of results.*

(*b*) *Motivation.*—The intention to learn.

(*c*) *Set.*—A specific set as to what is to be learned that will aid learning.

(*d*) *Attitudes.*—Material consistent with one's attitudes will be learned more readily.

(*e*) *Transfer of training.*—New procedures, etc., will be learned more readily if they have similar components to already learned techniques.

(*f*) *Repetition with reinforcement.*

(*g*) *Distributed practice* will help in learning complex tasks after an initial period of mass practice.

(*h*) *Active practice.*—Learning by doing is an often violated principle. Active involvement is always to be preferred to passive listening or watching.

(*i*) *Organization.*—The better organized the material, the more meaningful it is, the more quickly it will be learned.

6. Two factors related to attitudes causing resistance to change which must be dealt with if change is to be successful are: (*a*) Training for change disrupts the regular work of the individual and may cause him to fall behind and to lose the satisfaction of getting the job done; and (*b*) change may be seen as a move to a more efficient, less personal activity that will disrupt the social adjustment the individual has made.

7. In considering attitude change, the basic premise is: for attitude change to occur, need to change must be aroused. This premise can be applied as follows:

(*a*) *Adjustive or utilitarian attitudes.*—The administrator must lead the subordinate into dissatisfaction with the subordinate's own current attitude. His attitudes begin to shift only if alternative attitudes can be seen by him as moving toward an objective that he accepts.

(*b*) *Ego-defensive attitudes.*—These are the more difficult attitudes to change. Giving new information and threatening may only stiffen resistance. With these attitudes the administrator must recognize the time-honored concept of face-saving. The employee must not feel that an attempt to change his attitude is a personal attack on him. Emotional catharsis or letting off steam, permissive group meetings, or letting people air their objections, etc., may help in overcoming resistance based on ego-defensiveness.

(*c*) *Value expressive attitudes.*—These might most appropriately be aroused by the administrator. Doing the best job possible might become a superordinate goal.

(*d*) *Knowledge serving attitudes.*—If there is an ambiguous situation, the need for knowledge may help change attitudes. Under these conditions, providing information will be helpful.

8. There are various conditions facilitating attitude change:

(*a*) Role playing, or the actual provision of a new role for an individual which he chooses to accept may effectively change attitudes.

(*b*) Interpersonal pressure is the time-honored approach of getting a person into a situation where others can influence him. This has experimental evidence as well as tradition to support it.

(*c*) There is much evidence suggesting that behavior required of an individual can be a prelude to attitude change. The common view that we cannot legislate attitudes is both incomplete and incorrect.

(*d*) Information, particularly information that is credible, that is relevant to an individual's needs, that comes from a high-status person, to people who are willing to expose themselves to the information, may help in changing attitudes.

(*e*) Situational changes, such as in recordkeeping, may help effect a change.

(*f*) Participation often operates to influence behavior as well as attitudes.

9. In summarizing research on dissonance theory, the following guidelines for administrators emerged:

(*a*) The administrator should recognize different functions or attitudes and know that an individual must feel a need to change.

(*b*) The need to change must be aroused. Other needs, irrelevant, are often induced by special reward systems.

(*c*) Values important to the person should be aroused.

(*d*) Feelings of threat should not be aroused.

(*e*) Individuals or groups should be given a special role leading to behavior arousing feelings of dissonance and leading to attitude change.

(*f*) The groups should be used as a source of support for attitude change.

(*g*) An expression of commitment to change behavior should be made. The person should make some effort.

(*h*) The feeling of choice for the individual should be maximized.

(*i*) The useful limits of information should be recognized.

(*j*) Don't be surprised by individual differences.

(*k*) Don't be surprised if after all this, attitudes still don't change much.

10. There are three main organized attitude change procedures used in industry: (*a*) Management development, (*b*) human relations programs, and (*c*) participation methods. A favorable attitude toward one's administrative responsibilities is a necessary prerequisite for management development. The emphasis on the validity of human relations training is problematic. The feedback system, based on orderly collection of information, feeding it back to the system using it in making adjustments may be more effective. With participative methods, it is important that the individual come to a decision, even if it is not publicly stated.

11. In problem solving, which is often an essential part of change, the aspects in the environment relevant to success are:

(*a*) Access to necessary information.

(*b*) Time free from the pressures of routine.

(*c*) A system of rewards or sanctions that motivate problem-solving efforts.

(*d*) Stimulation from interaction with other professions.

(*e*) An atmosphere free from rigidity or threat.

12. Since many people prefer routine over problem-solving activity, perhaps special problem-solving activities should be assigned.

13. Two main barriers to effective problem solving are the wrong set and inadequate or improperly used information. In training or preparing people for problem solving, there are four stages.

(*a*) Increasing trainee's technical competence.

(*b*) Providing orientation and processes of problem solving.

(*c*) Providing practice.

(*d*) Maintaining a training attitude, an evaluative attitude toward subsequent experiences.

14. In a concluding statement on the problem-solving characteristic of an organization it is said, "The point for us to consider is that an organization's problem-solving system is more likely to be geared for past problems than for current or

future ones. The challenge is to examine and modify conceptual schema, types of information available, and assignments made in the light of current and future conditions in order to minimize any dysfunctional carryover from the organization's past."

Comment by Reviewer

The emphasis on having change experts be knowledgeable of learning, attitude and problem-solving research reinforces the concept that specially trained and educated change agents are needed.

RESEARCH UTILIZATION ANALYSIS

Criswell, Joan H. Research utilization in poverty situations. *Rehabilitation Record*, March–April 1969, 7–11.

PURPOSE

This paper, originally presented at a research utilization conference on rehabilitation in poverty settings, explores ways in which the techniques and approaches of vocational rehabilitation developed through research and demonstration projects can be applied to persons living in poverty.

METHOD

The material is, for the most part, drawn from Dr. Criswell's experience as chief of the Rehabilitation Research Branch, Social and Rehabilitation Service.

FINDINGS AND CONCLUSIONS

1. The author identifies the research conference (such as the one in which this paper was presented) as an effective utilization technique which "most typically occurs when one or more projects have come up with enough promising findings so that the time seems ripe to take stock of what is known, acquaint the consumer with what is now ready for application, and point the way to gap-closing or consumer involvement research projects" (p. 7).

2. A number of vocational rehabilitation projects have been concerned with dependency behavior and have generated approaches applicable to poverty. For example, the paraprofessional rehabilitation aide was a forerunner of the "New Careers" concept.

3. A new trend is identified: greater freedom and creativity among experimental subjects—"Subject Power." It is pointed out that when potential recipients of a service take part in the planning of a demonstration project and help to carry it out, the result is virtually "instant" utilization. This type of self-directed activity is particularly appropriate for demonstration projects among the economically disadvantaged.

Comment by Reviewer

This suggests an interesting extension of the idea of having practitioners take part in planning research: have the practitioner's clients—the ultimate consumer—also share in the planning.

RESEARCH UTILIZATION CASE STUDY

Croker, George W. Some principles regarding the utilization of social science research within the military. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961, pp. 112–125.

PURPOSE

The author undertakes to use the Air Force as a laboratory in which to examine the process of change. This is particularly appropriate because he examines certain aspects of Air Force activity during a period in which it was undergoing far-reaching changes and in which it utilized social science research. Drawing from his experience in a military setting, he proposes to develop some principles that govern the utilization process—if not social change itself.

METHOD

The paper consists of discussion and analysis of four research projects conducted between 1949 and 1954 under the direction of the Air Force's social science research agency. On the basis of this discussion, some generalizations are made concerning the problem of utilization of social science research within a military setting.

FINDINGS AND CONCLUSIONS

1. In the social sciences, utilization of research is inseparable from the conduct of the research itself. It must begin when the research begins, run concurrently with it, and extend beyond it. It cannot be taken for granted or treated passively.

2. Effective utilization depends on recognition of the total situation that can affect or be affected by the results of the research.

3. Effective utilization of social science research which is designed to aid top policymakers must take into consideration the unitary nature of the total process of national security preparation. (NOTE.—This implication relevant to military setting only.)

4. Effective utilization of social science research is often handicapped by the practitioner's failure to understand its nature; that is, he assumes that social science is less precise and less reliable than the physical sciences—which is, in the opinion of the author, fallacious reasoning.

5. Utilization seldom works on a "shot-in-the-arm" principle. A decision by a policymaker seldom if ever in itself accomplishes change. Positive and continued effort must be exerted to accomplish the changes that research indicates are desirable.

6. In the Air Force setting, the linkage should be provided by the use of officers serving as quasi-social engineers rather than by use of trained social science research personnel for such a purpose because: (*a*) It takes less time and effort to "retool" the officer than to indoctrinate the social scientist with the complexities of the Air Force; and (*b*) the officer exerts a symbolic "plus" for utilization, since he is already a member of the "in" group. (NOTE.—this implication is relevant beyond the military setting.)

Comment by Reviewer

The case material is unusually rich and full.

INNOVATION DIFFUSION
CASE STUDY

Dahling, Randall L. Shannon's information theory: The spread of an idea. In *Studies of innovation and of communication to the public. Studies in the utilization of behavioral science*, vol. 2. Stanford, Calif.: Institute for Communication Research, Stanford University, 1962, pp. 117–140.

PURPOSE

The purpose of the study was to find out how scientific ideas come into use and the way in which they spread.

METHOD

The new idea which was the basis for this study was Dr. Claude E. Shannon's mathematical theory of communication, which was first set forth in two articles which appeared in the "Bell System Technical Journal" in July and October of 1948. Dahling charted the dissemination of this idea through other professional journals between 1949 and 1955. The disciplines through which the idea spread included computer, electronics, psychiatry, psychology, engineering, educational psychology, biology, physiology, radar, linguistics, biosociology, library work, optics, education, statistics, social science, and journalism (in the order enumerated).

FINDINGS AND CONCLUSIONS

1. An idea is often drawn from a flurry of current related activity, and, as it develops, gains

impetus and speed of adoption from the same surrounding activity that gave rise to it.

2. The development and adoption of an idea is speeded by a clearly apparent need for the idea.

3. The idea spreads fastest in the discipline in which it develops because: (*a*) Related work going on in the discipline presents a more favorable condition for the spread, (*b*) authority of the source of the idea is recognized and accepted, and (*c*) vocabulary and methods are familiar.

4. An idea spreads more rapidly from one discipline to another when it clearly deals with matters of common interest.

5. An idea spreads more rapidly when it is in a language common to more than one discipline.

6. An idea spreads to other disciplines in proportion to its congeniality with their methods.

7. An idea spreads to other disciplines in proportion to its analogic and suggestive value.

8. An idea often gives rise to research and study centers which stimulate and shape its development.

9. The spread of a scientific idea via the popular mass media is limited.

Comment by Reviewer

A limited study but a lucid one.

CHANGE PROCESS
REVIEW

David, Paul T. Analytical approaches to the study of change. *Public Administration Review,* September 1966, 26, 160.

PURPOSE

To present ideas on the processes of change and, specifically, the changing relationship between government and the environment.

METHOD

The ideas presented in the article were developed from a seminar course on the processes of change.

FINDINGS AND CONCLUSIONS

1. Three basic assumptions provided the framework for further development of ideas. They were:

(*a*) The more important problems of government and public policy are typically the product of processes of change.

(*b*) The major processes of contemporary change are relatively few in number; and that each has characteristics giving it identity and a degree of autonomy, despite the complexity of the interaction among the processes and the resulting appearance of overlap and confusion.

(*c*) It is both possible and important to disentangle the major processes for separate study.

2. A taxonomy of change processes evolved. Change processes include: (*a*) growth processes and their concomitants; (*b*) innovative processes of science, technology, and invention; (*c*) ideological processes, belief systems and their impact; (*d*) conflict processes—mass conflict, revolution, and war; (*e*) communicative and learning processes; (*f*) predictive and policy processes; and (*g*) leadership and control processes.

All of the processes are clearly involved in a complex interaction with each other, but each has a separate identity. The first four processes are producers of change (desired or not). They may be influenced, controlled, directed, or conceivably stopped completely in some circumstances, but to the extent that they operate, change will occur. The final three processes are preventors of change, channelers of change, or restrictors of change. The remainder of the article is devoted to a discussion of the organization of instructional units utilized in the seminar and a discussion of the importance of structure in learning.

Comment by Reviewer

If one is interested in conducting a seminar on the process and theory of change, this article may be of value, as it provides suggestions for structuring and reading.

RESEARCH UTILIZATION
ANALYSIS AND SUGGESTIONS

Dexter, Lewis A. On the use and abuse of social science by practitioners. *American Behavioral Scientist*, 1965, 9(3), 25–29.

PURPOSE

The author warns the practitioner of the possible dangers confronting the user of social science research.

METHOD

The paper, originally presented to a group of psychiatric social workers, is developed around three themes: (1) Dangers facing users of social science research, (2) the sociology of occupations or professions as a potentially useful research area for psychiatric social workers, and (3) the relevance of political theory for increasing awareness of one's function and role. The analysis is based on the author's knowledge and experiences.

FINDINGS AND CONCLUSIONS

1. Experts generally tend to assume that the purposes of those whom they advise are the same as their own. This frequently is not true.
2. There is a tendency for practitioners to become followers of intellectual fads and fashions. Often only a fragmentary part of a given social science is in vogue for study; therefore, the practitioner is likely to be misled by the overemphasis on that one aspect.
3. There is a tendency for practitioners to make use of research findings as universal answers. There are very few universal answers. One of the greatest needs of social practice is to discover better techniques for overcoming the tendency in human beings to find what they are looking for.
4. The author suggests that in the face of our tendencies to follow fashion, many relevant ideas and approaches of considerable pertinence are overlooked or unknown because they are not fashionable. The sociology of occupations or professions is one such area. The author advocates the use of research findings from this area by psychiatric social workers.
5. The field of political philosophy has fallen out of fashion, so practitioners are hardly aware of its tremendous relevance to their decisions, actions, and policy problems. The author asserts that political theory is probably the most relevant skill for increasing awareness about one's function and role.

Comment by Reviewer

The value in this article lies in the warnings Dexter makes concerning the dangers in practitioners using social science research findings.

MENTAL HOSPITAL INNOVATION
EXPERIMENTAL STUDY

Dykens, J. W., Hyde, R. W., Orzack, L. H., and York, R. H. *Strategies of mental hospital change.* Boston: Commonwealth of Massachusetts, Department of Mental Health, 1964.

PURPOSE

This study describes and analyzes the process of innovation in the Northampton mental hospital in Massachusetts, from 1960 to 1963. The goal of this study was to find answers to a variety of questions: Should change come slowly, with maximum consensus of hospital people, or rapidly with less consensus? What are the steps in the change process? Among them, which steps are more important for successful change efforts, and which are less important? What are the sociological processes involved in mental hospital change? What are the individual and personal processes related to institution change? What is the effect on staff and patients of the hospital's relationship to the community?

METHOD

A questionnaire designed to test staff morale in relation to community involvement was circulated in 1961. The sample population included all medical, social service, and occupational therapy members of the staff, and those nursing service personnel working in the admissions and continued-treatment buildings.

In addition to the questionnaire, the project was devoted to developing a variety of programs. At the termination of the project 64 programs were enumerated in which the project had participated in some substantial degree. They included research; new patient services; augmentatin of existing patient services; volunteer acquisition and supervision; recruitment other than volunteers; education of outside students and citizens; inservice education; augmentation of internal communication, planning and interdepartmental relationships; and community relations.

A major goal of these programs was the strengthening of hospital-community relations. Visits were exchanged in one program with colleges and the university, and student volunteers were recruited.

To add breadth to the project, it was compared with nine other hospital improvement projects.

FINDINGS AND CONCLUSIONS

1. The assumption that the morale of a hospital staff is related to frequency and type of interaction the staff has with members of the community outside the hospital was supported in part by this initial investigation.

2. Decisionmaking at the hospital featured informality. Change in such a setting should occur through informal channels when those informal channels characterize the usual course of events in the hospital, and when the value system of the hospital staff does not sanction more directed and time limited attempts to induce change rapidly.

3. An acceptance of informality and gradualness does have some drawbacks: (*a*) A system of informal exchanges among staff is probably *by itself* unlikely in any systematic and urgent way either to generate change or to compel interest in change in current programing; (*b*) informality in exchange relationships among staff and between institutions, such as a hospital and a university, is not by itself likely to encourage creativity in thinking about or working toward long-range, complex and demanding goals. Informality would seem to be adaptive rather than stimulating.

4. Careful studies of morale and turnover showed that morale was high and turnover of personnel was low.

5. State hospitals probably have resources of which they are unaware: the psychologist may have a good new thought about ward management, the social worker may have a new understanding about a patient's family which could help the psychiatrist create a new total plan for his work with the patient. Each treatment team member might profitably reflect ideas with colleagues, in order to find new solutions to problems.

6. State mental hospitals are subject to external pressures from a variety of sources, including local communities and supervising central office of the State mental health agency. The external pressures may assist or hinder the creative process within the institution. Consideration of them should be included in strategies for mental hospital change.

7. In comparison with nine other hospital improvement projects, it was found that the characteristics utilized in this one study had quite general applicability.

8. Change efforts ultimately should be directed toward assisting hospital people to become their own agents for change.

9. In the change relationship, the strategist should place his initial effort in understanding the direction, speed, and content of change already occurring in the hospital. Such understanding can be aimed at helping the hospital reach toward its own goals. Those goals about which the strategist and hospital people are later unable to reach consensus can be modified more easily if there is some earlier agreement about other change.

10. Hospital people may have difficulty in finding directions or areas for change, time for change, or skills to effect change. These difficulties can be at least partly solved by the strategist and the hospital people working together.

11. The strategist needs to understand the meaning of the lack of change efforts, or of the

factors that have prevented successful and creative change efforts. He can profitably look along the time dimension and thus into the past history of change in the hospital as well as its current and future plans.

12. Mutual participation in change efforts may lead to positive and constructive feelings and can further enthusiasm for change. The process of change is most successful when any of its aspects arise from within the person or persons the strategist would hope to change.

Comment by Reviewer

This study provides a view in depth of the process of innovation in one mental hospital, and offers evidence that the methods and findings used here are adaptable to other mental hospital situations.

RESEARCH UTILIZATION MODELS/CASE STUDIES

Eash, Maurice J. Bringing research findings into classroom practice. *Elementary School Journal*, 1968, 68(8), 410–418.

PURPOSE

The purpose of the paper is to examine several approaches to applying research findings in the classroom.

METHOD

The author presents three models for translating research into classroom practice. These models reflect data from the literature and from the author's experiences. Two case studies are presented in amplification of the preferred model (coaction).

FINDINGS AND CONCLUSIONS

1. The process most widely used in bringing research findings into classroom practice is the *displacement model*. The desired change is, in effect, forced upon teachers and pupils because it displaces a similar component. (Examples: new textbooks, introduction of programed instruction.) Among the disadvantages of the displacement model are:

(*a*) There is no assurance that the research will be used with any degree of consistency.

(*b*) The displacement procedure usually requires a heavy economic commitment by the school; this tends to stifle criticism (including useful feedback) on the part of the practitioners.

(*c*) It conceptualizes the instructional process as an assembly line, overriding the human factors.

2. The *authority model* assumes that the classroom practitioner need only to be exposed to research and he will put it to use. In this approach, researchers, acting in an authoritative role, bring the findings to practitioners. The drawbacks to this model are:

(*a*) Research findings are generally introduced without translating them into the context of the classroom practitioner, who works with a multitude of variables that may not be accounted for in the original findings.

(*b*) In the interaction between researcher and practitioner, there is an implication that the teacher is inadequate—which heightens tension.

(*c*) When findings are introduced in a group meeting without followup, there is little incentive for practitioners to adopt new findings that require modification of practice.

(*d*) Offsetting the forces that undertake to bring about change through formal channels of authority, informal structures in the organization mobilize forces to resist the change.

3. The *coaction model* is based on the assumption that the use of research findings must be a two-way action that engages the researcher and the practitioner in a mutual task. The author's position is that the element of reciprocity in this

model enables it to correct the inadequacies of the other two models.

4. The coaction model often involves the intervention of an outside agent (change agent) who should have a broad knowledge of research findings, an understanding of classroom functioning, the ability to translate research findings from other contexts into the classroom setting, and skill in interpersonal relationships.

Comment by Reviewer

In both the case studies presented in relation to the coaction model, it is worth noting that the participation involved not only the practitioners (teachers) but, even more markedly, the consumers (pupils). In fact, in both instances, it seemed to be the novel and bold involvement of the pupils that resulted in the bringing about of change.

REJECTION OF INNOVATION

INTERVIEW-SURVEY

Eichholz, Gerhard C. Why do teachers reject change? *Theory Into Practice*, 1963, 2, 264–268.

PURPOSE

The author explores the rejection of newer audiovisual innovations in a school environment in order to test his theory of rejection. Eichholtz's theory of rejection closely parallels commonly accepted adoption models. He postulates an awareness stage, an indifference stage, a denial stage, a trial stage, and finally rejection.

METHOD

Sample

A sample of 45 teachers were drawn from five elementary schools in a large metropolitan school system. Selection criteria were: grade level (15 teachers from each of the following grade levels: 1–2, 3–4, and 5–6); teaching experience (15 teachers from each of the following ranges of experience: 1–3 years, 7–10 years, and over 15 years); and known innovation rejector.

Procedure

Each teacher included in the sample was interviewed with an open-ended questionnaire designed to uncover feelings toward the newer media. All interviews were over an hour in length, tape recorded, transcribed, and evaluated in terms of attitudes toward specific innovations. These attitude statements were tabulated on the basis of a previously developed rejection classification system.

An inventory of the newer media available at each school was also compiled and checked against the teachers' responses concerning this equipment.

FINDINGS AND CONCLUSIONS

1. Attitudes of rejectors were not related to the grade level at which the teacher taught, or to the number of years of teaching experience.

2. Real reasons for rejection and stated reasons for rejection were not always the same.

3. No teacher rejected *all* of the new media.

4. Although the postulated stages of rejection appeared to hold, it was necessary to revise the postulated forms of rejection. The new classification derived was as follows:

Form of rejection	Cause of rejection	State of subject
1. Ignorance	Lack of dissemination	Uninformed.
2. Suspended judgment	Data not logically compelling	Doubtful.
3. Situational	Data not materially compelling	1. Comparing. 2. Defensive. 3. Deprived.
4. Personal	Data not psychologically compelling.	1. Anxious 2. Guilty. 3. Alienated.
5. Experimental	Present or past trials	Convinced.

5. The following were suggested as ways of overcoming resistance:

(*a*) Circulate information.
(*b*) Let innovators lead the way.
(*c*) Maintain an environment conducive to experimentation.

(*d*) Be sympathetic, wait for pressure for innovation to mount.

(*e*) Remain sympathetic to failure for the attempt may eventually lead to acceptance.

Comment by Reviewer

This is one of the few studies that have attempted to explore reasons for rejection. Although the study itself is not conclusive enough to support the theory of rejection or the newly postulated forms of rejection, it is a beginning in that direction. Most of the mental states of rejectors hypothesized by Eichholz seem to stem from insecurities and fears in the potential adapters; thus, his suggestions are aimed primarily toward providing a secure environment for innovation and experimentation.

REJECTION OF INNOVATION

ATTITUDE STUDY AND THEORETICAL ANALYSIS

Eichholz, G., and Rogers, E. M. Resistance to the adoption of audiovisual aids by elementary school teachers. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 299–316.

PURPOSE

The purpose of this paper is to illustrate the convergence between two major intellectual traditions (education and rural sociology) focusing on the diffusion of innovation, using data from an investigation of the rejection of audiovisual aids by elementary school teachers.

METHOD

The subjects were 45 elementary school teachers who, on the basis of pretesting, were determined to have rejected electromechanical innovations for classroom use. They were interviewed with an open-ended questionnaire designed to uncover their feelings toward audiovisual aids. On the basis of the findings, the authors attempt to formulate a theory of rejection, in which parallels can be cited for the five phases previously identified as comprising the adoption process: Awareness, interest, evaluation, trial, and adoption.

FINDINGS AND CONCLUSIONS

1. The following types of rejection responses were reported:

(*a*) *Rejection through ignorance*—innovation unknown or too complex to be understood.

(*b*) *Rejection through default*—*innovation* known but subject not interested in its usage.

(*c*) *Rejection by maintaining the status quo*—not used in past and accordingly not acceptable.

(*d*) *Rejection through societal mores*—not accepted within context of subject's society.

(*e*) *Rejection through interpersonal relationships*—friends not using innovation.

(*f*) *Rejection through erroneous logic*—seemingly rational but actually unfounded reasons given for rejection.

(*g*) *Rejection through substitution*—stressing practices which *are* used to warrant rejecting innovation.

(*h*) *Rejection through fulfillment*—subject already knows best way to teach, hence innovation is unnecessary.

(*i*) *Rejection through experience*—has tried new techniques and feels they have failed.

2. On the basis of the foregoing, the authors formulate the following framework for the identification of forms of rejection:

(*a*) *Ignorance*—caused by lack of dissemination of information.

(*b*) *Suspended judgment*—because the data are not logically compelling.

(*c*) *Situational*—because the data was not materially compelling.

(*d*) *Personal*—because the data are not psychologically compelling.

(*e*) *Experimental*—because past or present trials were not successful.

3. Paralleling the above five forms of rejection, the authors propose a (tentative) rejection theory in which the process is made up of the following phases: Awareness, indifference, denial, trial, and rejection.

Comment by Reviewer

The paper includes some material about the similarities and contrasts in diffusion research in rural sociology and education (which was the stated purpose of the paper) but these comments are not included in this summary. The material relating specifically to rejection has been abstracted because it presents very illuminating insights on the process of adoption, as viewed from the other side of the coin.

RESEARCH UTILIZATION PROGRESS REPORT

Engstrom, G. E. Where we stand on research utilization. *Rehabilitation Record*, November–December, 1969, 28–32.

PURPOSE

This paper undertakes to examine and account for the headway which has been made by the Social and Rehabilitation Service in strengthening its efforts in research utilization since the appointment, less than 3 years ago, of a research utilization task force.

METHOD

The paper was developed on the basis of information at the disposal of the author in his position as Chief of the Research Utilization Branch of the SRS Division of Research and Demonstration Grants.

FINDINGS AND CONCLUSIONS

1. SRS has undertaken a series of publications called "Research and Demonstration Briefs," which serve as a linking agent between practitioners and researchers. They present digests of completed projects in which the methodology has been verified but the findings and implications for practice need further visibility.

2. The agency is preparing to publish a series of "Research Trends" which will disclose the preliminary findings of projects currently in progress in an attempt to shorten the time gap between the testing and the application of those findings.

3. Project directors of all SRS-funded projects are now required to include in final reports a separate listing of significant findings.

4. All final reports, since the inception of the rehabilitation research program, are now being abstracted; each abstract will describe the problem studied, how it was investigated, the major results, and their usage potential.

5. SRS is updating bibliographic and indexing tools for the use of rehabilitation practitioners.

6. It is experimenting with the value of a research utilization laboratory to aid in modification of demonstration projects for widespread adaptation. The pilot laboratory, conducted by the Chicago Jewish Vocational Service, is taking research results of earlier projects related to sheltered workshops, modifying the programs to make them applicable to a variety of agency conditions, and preparing operating guidelines for their use by agencies and counselors.

7. It has introduced a new team member in State rehabilitation agencies, the Research Utilization Specialist, who will serve as change agent. Nine State agencies are utilizing this new function on a 5-year demonstration basis.

8. It has sponsored a number of research utilization conferences, each focused on a specific subject, to encourage the researcher, the practitioner and the administrator to explore the ramifications of new findings and to develop recommendations for action.

9. It is planning demonstrations of how a variety of media (films, for example) can more effectively be used to achieve better communications for the rehabilitation and welfare fields.

Comment by Reviewer

Many specific ideas here for the role of the funding agency in promoting research utilization.

PLANNED CHANGE
ANALYSIS AND SUGGESTIONS

Erwin, P. H., and Langham, F. W., Jr. The change seekers. *Harvard Business Review*, January–February, 1966, 44, 81–92.

PURPOSE

A logical analysis of how to plan for change in business.

METHOD

The ideas in this article are based on the broad experience and observations of the authors.

FINDINGS AND CONCLUSIONS

1. Viable organizations must have an attitude that change is normal and inevitable. A key to success, indeed to survival in the future, must surely be to generate an attitude that change is normal. Top managers must be change seekers.

2. Any change should be approached simultaneously on two fronts, the logical and the psychological. The logical aspects are concerned with determination of all the facts, forecasts, alternatives, and practical advantages and disadvantages of the situation. The psychological approach is required in order to gain acceptance of change with a minimum of resistance. While the logical factors are often dealt with superficially, too frequently the psychological factors are wholly ignored.

3. Plan the change far enough in advance so that all people affected will have sufficient lead-time to—

(*a*) understand the change and accept the need for it;
(*b*) decide how their individual talents can be employed to contributed to the change;
(*c*) adjust their wants and needs to be compatible with organizational wants and needs; and
(*d*) receive recognition for improving the total work situation through solving an interesting and exciting problem which will prove beneficial to the organization and the society in general.

4. Conflict between administrators and initiators must always be expected. To quote Chief Justice Hughes, "Conflict is one of the laws of life. It can be dangerous or it can be harnessed to progress."

Comment by Reviewer

The education field, as well as business, is attempting to induce the attitude that change is normal. The same effort should characterize the mental health field.

ORGANIZATIONAL FACTORS AND INNOVATION

SURVEY STUDY

Evan, W. M., and Black, G. Innovation in business organizations: Some factors associated with success or failure of staff proposals. *Journal of Business*, 1967, 40, 519–530.

PURPOSE

An analysis of some of the factors affecting the success of proposals for innovation submitted predominately by staff specialists to line management.

METHOD

The findings in this paper are based on a study of a small sample of business organizations. The dimensions of the innovation process investigated in this study were:

- (*a*) Attributes of the proposal for innovation; character of the new idea. For example, does it involve a radical change, is the outgrowth of research of high or low quality, etc.
- (*b*) Attributes of the structure of an organization that facilitate or inhibit the implementation of new ideas. For example, does decentralized or centralized structure facilitate innovation?
- (*c*) Attributes of the staff-line relationship that affect the innovation process. For example, how adequate are the communication channels between staff and line?

FINDINGS AND CONCLUSIONS

1. Staff proposals were more likely to be successful in organizations with—

- (*a*) a higher competitive position;
- (*b*) a higher degree of professionalization of staff personnel;
- (*c*) a higher degree of formalization of rules;
- (*d*) a higher degree of communication between staff and line personnel;
- (*e*) a higher degree of quality of proposals;
- (*f*) a higher degree of perceived need for proposals; and
- (*g*) a lower degree of professionalization of management.

2. The variables of: (*a*) Managerial receptivity to change, (*b*) degree of centralization, (*c*) size of organization, and (*d*) number of proposals per manager, were eliminated as being less important in discriminating between the success and failure of staff proposals.

3. The study further found that organizations characterized by: (*a*) A higher degree of formalization and centralization, (*b*) a higher degree of communication between line and staff, (*c*) a higher level of quality proposals, and (*d*) a higher level of managerial receptivity to change were likely to receive administrative proposals.

4. Organizations that: (*a*) Were larger in size, (*b*) had a higher degree of professionalization of management, and (*c*) had a larger number of proposals per manager were likely to receive technical proposals.

Comment by Reviewer

The factors noted in this study related to the success of innovation proposals would appear generalizable to the success of the innovations themselves.

RESISTANCE TO CHANGE
CASE STUDY-EXPERIMENT

Evans, R. I., and Leppmann, P. K. *Resistance to innovation in higher education: A social psychological exploration focused on television and the establishment.* San Francisco: Jossey-Bass, 1968.

PURPOSE

This is a social psychological exploration of the role of university faculty in the diffusion of innovations in the university. The authors also report the findings of an experiment designed to determine the effects of actual experience with an innovation or attitude and behavior change.

METHOD

After reviewing the studies that explore values, beliefs, and other personality characteristics of university faculty and how they affect the process and function of innovation in higher educational institutions, the authors surveyed the faculty of a university in a metropolitan university where instructional television was being introduced to ascertain attitudes toward instructional television. This initial survey indicated that the majority of the faculty was opposed to the use of television in their classes.

Experiment

1. *Subjects.*—In order to determine the effects of experience with an innovation on change in attitudes, the authors then conducted an experiment using 20 faculty members who were almost equally divided into pro-instructional television, anti-instructional television, and neutral with respect to instructional television groups. The remaining 100 members of the faculty served as a control group.

2. *Treatment.*—Those individuals in the experimental group were asked to prepare, produce, and participate in at least one 45-minute presentation to be recorded on a video-tape recorder. In addition, as a means of increasing commitment, all members were asked to collaborate in the production of several video tapes, which represented a cooperative effort.

3. *Data Collected.*—The subjects were offered consultation and help in preparation. The television production coordinator, a member of the research team, completed a detailed written report on the quality of each tape and the verbal and nonverbal behavior of each participant. Each experimental subject was asked to write a report on his experience and his opinion of the video-tape recorder as a device for improving teaching.

FINDINGS AND CONCLUSIONS

1. In comparing those individuals who were pro-innovation with those who were against the innovation of authors found that those in favor of instructional television were:

(*a*) Less conservative, less traditionally oriented, and perhaps, in a way, less "scholarly" and "academic" in the narrow sense of the word.

(*b*) They tended to feel the university climate can and should include some noncurricular or extracurricular activities.

(*c*) Their attitudes toward teaching and student evaluations were also more "positive"—

  (1) they were willing to teach on television, more likely to prefer smaller classes and more likely to be intrigued with teaching methods;

  (2) they were more willing to receive additional training, and far more eager to experiment with various instructional methods, such as class demonstrations, field trips, motion pictures, television viewing, and even teaching machines and television lectures; and,

  (3) they were willing to utilize student feedback and reported more variation in evaluating student performance.

2. In the interview situation the pro-innovation faculty were judged to be more tolerant and sophisticated and less hostile and bland.

3. Pro-innovation faculty had also taught at more institutions than those who were against instructional television.

4. The anti-instructional television professors were academically oriented, valuing the straight lecture method as most significant. They were able to state a significantly larger number of disadvantages to television instruction than the proinnovation faculty.

5. Those faculty who were initially opposed to instructional television exhibited an attitude change in the direction of more positive feelings toward it; however, this trend was not statistically significant. Changes in attitude also occurred among those members of the control group who had heard about the video-taping experiment. There was little or no change in those faculty members who had no contact with the experimental group.

6. The pro-innovation faculty, in general, produced slightly higher quality tapes than the anti-innovation faculty. However, there were some high-quality tapes produced by the anti-innovation faculty.

7. The findings and analysis drawn from this indepth study in one university and the investigation of faculty attitudes on nine other campuses leads the authors to these conclusions:

(*a*) Many professors seem to think that much training, equipment, and general reevaluation of teaching goals would be required in order to utilize instructional television.* Further evidence suggested that if a complex innovation such as this could be broken down into palatable bits it might be more readily acceptable.

(*b*) The authors also found that the source from which the innovation is introduced affects the attitudes of the adopters. The degree of innovation acceptance by professors may partly depend on whether they viewed the innovations as being instituted or imposed by the university administration or whether they felt that it originated within their own departments.

(*c*) Some institutions seemed to provide a more receptive social climate for the introduction and acceptance of innovations. Some institutions appear to encourage innovation by rewarding the innovator through increased rank, salary, or other fringe benefits. The institutions had a more innovative faculty.

(*d*) The authors also suspect that job security may be intricately involved in innovation adoption in higher educational institutions.

Comment by Reviewer

The findings from this study support those of many other studies comparing more innovative individuals with less innovative individuals. For example, the fact that pro-innovation faculty had taught at more institutions than anti-innovation faculty supports the generalization that those individuals who have a wider range of experience and are more cosmopolitan also tend to be more innovative.

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*The author's conclusions are also in line with those from other studies of innovation in organizational settings.

APPLIED SOCIAL RESEARCH
CASE STUDY ANALYSIS

Fairweather, George W. *Methods for experimental social innovation.* New York: Wiley & Sons, 1967.

PURPOSE

The principal purpose of this book is to provide possible answers to two questions:

(1) How can society effect needed changes in ongoing social processes with a minimum of disruption? The proposed answer is to create new social subsystems whose methods include innovating models as alternative solutions to social problems, experimentally evaluating them, and disseminating the information to those who can make the appropriate changes.

(2) How can this be done? The answer to

this question is by the methods of experimental social innovation presented by the author.

METHOD

The ideas in this book have been developed by the author during the course of 13 years of experimental work aimed at solving the problems of several marginal groups, such as chronic mental and tubercular patients, criminals, etc.

FINDINGS AND CONCLUSIONS

1. Distinguishing features of social innovation experiments are: (*a*) These experiments create new social subsystems which clearly define the statuses and roles of the participating members: (*b*) the new subsystems, which are designed as alternative solutions to significant social problems, are systematically varied, controlled, and compared; (*c*) the experiments should be imbedded in selected social institutions so that they are an integral part of that society and are established so that society need only passively accept them and need not support or endorse them; (*d*) social innovative experimenters must assume responsibility for the members participating in the subsystems. This last characteristic is particularly important; social innovative experimental methods are a special combination of service procedures and research techniques.

2. The author discusses the entire research process in great depth. Of particular relevance is his analysis of factors relating to obtaining administrative commitments necessary for the success of the effort. One of the first obstacles to social innovative research in a rehabilitation setting is the traditional separation of research and service.

3. Unless the researcher can elucidate how the research might help solve some of the vexing problems faced by the organization or aid in the accomplishment of institutional goals, it is unlikely that management will approve of the project.

4. Care must be exercised in clearly communicating to management the importance of insulating the service units involved in the research from any institutional practices that might destroy the research. Management should agree that once experimental procedures have been established, they cannot be changed until the project is completed.

5. The tendency of some administrators to agree to research projects because of the prestige attached without full knowledge or appreciation of their obligations can cause numerous problems when the time comes for management to back up their commitment with space, staff, etc.

(*a*) This "Yes-No" phenomenon among administrators is less likely to occur if the researcher has asked concrete questions about administrative obligations.

6. Another common source of difficulty is the frequently held preconception by institutional management that research will bring additional services to the institution without cost to the institution; i.e., management views the research budget as a supplement to the agency budget for use in paying for the existing service programs rather than as funds for meeting new research needs. In order to prevent such a misunderstanding the researcher should clearly describe the use of the research budget to management.

7. Agreement concerning publicity to be given the project should be made in advance.

8. The matter of publication rights should be clearly agreed upon prior to the research effort.

9. In order to avoid possible conflicts and establish mutual understanding and agreement, the researcher should raise the following questions to management:

(*a*) What will be the amount of the research budget?

(*b*) Will management grant the researcher the authority to select institutional residents to go to the research unit when this is required for sampling purposes?

(*c*) If important individuals within the institution complain about the research unit simply because it receives special consideration, will management continue supporting it?

(*d*) Will management be willing to provide needed personnel?

(*e*) Will space be provided the research team?

(*f*) Will there be arrangements for computer analysis of the data?

(*g*) Will management respect its commitments and not request the researchers to violate the research design or to participate in the usual institutional procedures when to do so would curtail their full-time research effort?

10. In return, the researcher should assure management that:

- (*a*) He will not violate any of the existing institutional norms except those agreed upon by both parties as an inherent part of the research.
- (*b*) He will give periodic progress reports to management.
- (*c*) He will not change any of the agreed-upon procedures without specific permission for management; upon the emergence of any unforeseen difficulties involving the institution, he will request a meeting with management to discuss these problems.

11. Research or social innovation experimentation conducted in a broader community setting requires the following considerations:

- (*a*) Agreements should be obtained from and goals clearly elucidated to affected community institutions, so that their representatives can become, if they wish, a part of the innovative experiment.
- (*b*) Since superficial boundaries that separate a community from an isolated institution cannot be maintained, reciprocities should be arranged with both a selected institution and representatives of the larger community.

12. If a particular successful project is to be considered worthy of wider dissemination, a determination must be made as to whether or not its results can be generalized to solve the existing problem in the society. This depends upon three conditions:

- (*a*) How representative the original sample is of the problem population in a society.
- (*b*) How representative the experimental social context is of the social context in which the problem is typically found in a society.
- (*c*) How the criterion for evaluating the success of the project compares to society's consensus of the solution to the problem.

13. Following a social innovative experiment, the researcher must clearly state his inferences, cite the evidence for his conclusions, and make recommendations about social change to the interested agents of a society.

14. Where a recommended solution is adopted by a society, members of the research team should, in addition to publishing written reports, function as social action consultants to aid in the implementation of programs based upon their research results.

15. The recommendation is made that a number of centers for experiments and training be established in universities, industrial institutions, government agencies, or private foundations. Such centers would:

- (*a*) Continually initiate new social innovative research.
- (*b*) Establish a communication system between the community and itself and thus be a mechanism for change.
- (*c*) Provide a sharing of information and cross-fertilization of ideas.
- (*d*) Help establish administrative procedures for implementing community and institutional reforms.

Comment by Reviewer

The author offers numerous specific suggestions related to the conduct of research in a practice setting to serve as guidelines to achieving a productive partnership between researchers and practitioners.

CONSULTANT ROLE
ANALYSIS

Ferguson, Charles J. Concerning the nature of human systems and the consultant's role. *Journal of Applied Behavioral Science*, 1968, 4(2), 179–193.

PURPOSE

The author conceptualizes the consultant role in a systems framework and describes the processes that the consultant uses to help the client system externalize disruptive tendencies and move toward collaboration of its subparts.

METHOD

The article is based on the author's experiences and intellectual analysis.

FINDINGS AND CONCLUSIONS

1. All human systems, whether individual or collective, consist of a synthesis of subparts and subsystems. It is the nature of the relationship between subparts or subsystems that make for collaboration and health of the system or for imbalance, stress, and dysfunction.

2. Every boundary between system parts offers an opportunity for collaboration or competition. Collaboration and competition are natural forces; interdependent subsystems naturally compete. Competition is often stimulating to a system, it is not undesirable, per se.

3. The consultant's focus is the management of relationships or interfaces between subparts or subsystems. He determines what can be done to evoke collaborative tendencies among subparts and/or to reduce the tendency toward destructive competition among interdependent subparts.

4. The consultant uses himself to help a client system externalize and explicate "nonfit" between interfaces or along boundaries. He uses himself to release forces within the system that move it toward balance and health.

5. A number of functions or activities of the consultant may be identified:

- (*a*) *Capture data.*—The consultant listens and observes; he finds cause and effect relationships, identifies symptoms of stress, and locates the strengths of the system.
- (*b*) *Scan for troubled interfaces.*—The consultant acts as a radar device; he detects distortions and misinterpretations in the interactions of system components.
- (*c*) *Promote psychological bonding.*—He helps establish mutual identification, communication, understanding, and concern among system parts.
- (*d*) *Act as linking agent.*—He links people who need to be brought together, arranges confrontations, and promotes effective interpersonal communication.
- (*e*) *Serve as communications conveyor.*—The consultant serves as an auxiliary communication medium; he can convey data more freely than formal channels and moves critical attitudinal data along and spreads awareness.
- (*f*) *Suspend animation and analyze the process.*—He temporarily neutralizes real authority by asserting his own authority as a consultant so that the uses and consequences of the real authority may be studied. Because he is not wrapped up in the problem-solving process, he can speak to the need to stop the action and analyze the process objectively.
- (*g*) *Clarify formulation of issues.*—The consultant cuts through the emotional smoke.
- (*h*) *Release emotional issues.*—He brings out feelings by raising key issues and assists in working them out; he serves to legitimize discussion and consideration of feeling.
- (*i*) *Make communication congruent.*—He assists in evoking more honest, authentic interchanges and can monitor communication and exercise "quality control."
- (*j*) *Encourage feedback.*—He develops two-way or multichanneled interchanges among system parts.
- (*k*) *Promote a spirit of inquiry.*—He promotes the examination of data and helps develop in others an ability to dig up data and a spirit of learning.

(*l*) *Coach and build teams.*—He acts to release the supportive capacity of group members and fosters the sharing of experiences and concerns.

(*m*) *Assist in the management of conflicts.*—He fosters acceptable confrontation and clarifies the dimensions of conflict.

(*n*) *Promote a proper psychological climate.*—By his own attitudes toward conflict and its resolution he serves as a model.

(*o*) *Take calculated risks.*—He is able to take risks in stretching perception and creating awareness that those who are locked into a system may not be so prepared to take.

Comment by Reviewer

Although this is a rather abstract and somewhat dramatic presentation, the processes described may be applied to many consultative settings. Ferguson's consultant, for example, might be a needed resource in helping an organization overcome resistance to change.

RESEARCH UTILIZATION
CASE STUDIES

Flanagan, John C. Case studies on the utilization of behavioral science research. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961, pp. 36–46.

PURPOSE

To report on two studies in the behavioral science field which were similar in many ways but differed markedly in the extent to which the results have been utilized.

METHOD

Two studies, both carried out by the American Institute for Research (of which Dr. Flanagan is director), were compared with respect to a number of factors. Both studies related to the development of new evaluation procedures for the client organization. In the case of one study (the development of an evaluation procedure for hourly wage employees) the findings were extensively utilized. In the other (the development of an objective proficiency check for private pilot certification), there was only limited utilization. The author draws conclusions concerning the reasons for the differences.

FINDINGS AND CONCLUSIONS

1. The following conditions were present in both situations and are assumed to be important in determining utilization of research findings:

(*a*) Research was based on data collected from actual field operations.

(*b*) Procedures which were developed were tried out under field conditions.

(*c*) Those responsible for the ultimate decision to use the findings were included in the planning.

(*d*) Projects selected were not beyond the state of the art; effective techniques were available for carrying them out.

2. The following conditions existed more recognizably in the project with extensive utilization than in the one with limited utilization—hence they are assumed to be particularly conducive to utilization:

(*a*) The requirements of the study originated with the persons responsible for using the findings.

(*b*) Top management was sensitive to the need for improvements in the area being studied.

(*c*) The ultimate users took part in collecting data and evaluating results.

(*d*) The decisionmakers and the ultimate users perceived the change as resulting in definite personal benefits to them.

(*e*) The potential benefits were tangible and readily evaluated.

3. There seemed to be no relationship between the conclusiveness of evidence favoring adoption

of the new procedures and the extent to which they were actually adopted. That is, credibility may not be as important as other studies indicate.

Comment by Reviewer

Reaffirmation of principles encountered in other literature.

DIFFUSION OF INNOVATION RESEARCH

Fliegel, F. C., and Kivlin, J. E. Attributes of innovations as factors in diffusion. *American Journal of Sociology*, 1966, 72(3), 235–248.

PURPOSE

The objective of this study was to identify a specific set of attributes of innovations and to explore the extent to which these attributes accounted for differences in rate of adoption of innovations in modern farm practices.

METHOD

The sample was made up of 229 relatively prosperous, fairly homogeneous farm operators from a single county in Pennsylvania; they were all sole owner-operators of medium-sized, commercial dairy farms. The adoption histories of these farmers with respect to 33 innovations was explored. A list of 15 innovational attributes was drawn up: Initial cost, continuing cost, rate of cost recovery, payoff, social approval, saving of time, saving of discomfort, regularity of reward, divisibility for trial, complexity, clarity of results, compatibility, association with dairying, mechanical attraction, pervasiveness. The farmers (by a split sample interview procedure) were asked to rate the 33 innovative farm practices with respect to each of the 15 attributes. The investigators were aware of the possible interrelationships involved in the impact of the various attributes; partial correlation was used in reporting the outcomes, to isolate the effect of any given attribute on rate of adoption without disregarding the effects of all the others.

FINDINGS AND CONCLUSIONS

1. Initial cost involved in adopting an innovation was not a deterrent to rapid adoption for this sample.
2. High continuing costs did, to some extent, deter rapid adoption.
3. Rapid recovery of costs was not positively related to rate of adoption.
4. Payoff (magnitude of return) was positively associated with rate of adoption.
5. Social approval (that is, noneconomic returns) did not seem to be an important factor in explaining rate of adoption.
6. The saving of worktime was a positive factor with respect to rate of adoption, but less so than the investigators had hypothesized.
7. Relief from odious tasks was a relatively unimportant factor in this context.
8. Regularity of reward (that is, the perception that an innovation will produce the desired results over repeated trials) was positively associated with rate of adoption.
9. Divisibility of trial (that is, the extent to which the innovation lends itself to small-scale tryout before full adoption) was an important factor in encouraging rapid adoption.
10. The perceived complexity of an innovation was less of a deterrent to rapid adoption by this particular sample than the investigators had anticipated.
11. Similarly, the clarity of results had a weaker positive relationship to rate of adoption than had been anticipated.
12. Compatibility between the innovation and the traditional way of doing things was not an important factor in explaining rate of adoption (though the investigators reported reservations about the validity of their findings in this respect).
13. Association with dairying was a relatively important factor in explaining rapid adoption.
14. Mechanical attraction was not an important factor in adoption decisions.
15. Pervasiveness (that is, the possible ramifications resulting from the acceptance of a given idea) was not a significant deterrent to rapid adoption.

16. On the basis of the foregoing findings, the investigators advanced the following conclusions:

(*a*) In commercially oriented situations, innovations perceived as most rewarding and involving least risk and uncertainty are accepted most rapidly.

(*b*) In situations involving less emphasis on commercial considerations, it is logical to expect that more importance would be attached to the communicability of new ideas and their effects.

(*c*) A potential adopter's main occupational interest has a "halo" effect in contributing to rapid adoption of innovations most closely allied to that interest.

Comment by Reviewer

The authors of this paper repeatedly warn that the findings they report are relevant only in terms of the specific sample involved in this study and that generalizations should be drawn very cautiously. Granted these boundaries, this study is particularly useful because it presents empirical data with reference to factors affecting adoption of innovation.

INNOVATION
EXPERIMENTAL STUDY

Fox, R. S., and Lippitt, R. The innovation of classroom mental health practices. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 271–299.

PURPOSE

To study the process involved in the instigation and support of teacher innovation in improving the classroom learning climate.

METHOD

This experimental study, which was carried out at the University of Michigan, hypothesized that teachers might be encouraged to make changes in their classrooms either by: (1) Collaboration with the research team in gathering and interpreting data about the state of affairs in the teacher's own classroom, leading to innovations designed to modify the situation; or (2) examining the innovative efforts of other teachers in meeting situations similar to ones believed to exist in one's own class.

The project was carried out in the following phases:

(1) Conceptualization of the professional growth process which stimulates the emergence of innovations in teaching practice relevant to improvement of mental health and learning conditions; and conceptualization of the conditions within a school system necessary to facilitate the spreading of such innovations.

(2) Development of a battery of instruments to explore aspects of the classroom group structure, peer standards toward learning and classroom behavior, teachers' self-concept, teaching objectives, pupil desire for change, etc.

(3) Recruitment of a sample of 30 collaborating teachers who underwent an extensive measurement program.

(4) Stimulation and support of teachers with respect to innovative practices, carried out at three levels:

   (*a*) Nine teachers were provided maximum involvement, with a 6-week full-time summer workshop to sharpen diagnostic skills and plan new programs. This group also had clinic sessions and consultation throughout the year.

   (*b*) A total of 10 teachers were provided medium involvement. They did not attend the summer workshop but received a program of feedback conferences during the school year through area meetings and through consultation.

   (*c*) The remaining 11 teachers had minimal involvements—no summer workshop, no feedback and interpretation of their classroom data, no consultation.

(5) A year after the initial recruitment, extensive remeasurement was carried out.

(6) Planned spread of innovations was carried out, but at the time the paper was prepared this phase was still in process and no data were included concerning this aspect of the study.

FINDINGS AND CONCLUSIONS

1. Teachers participating in the intensive summer workshop became the most highly involved, attempted the greatest number of new ideas in their classrooms, and were most successful in bringing about some changes.

2. A teacher's generalized concern for improvement can move toward a more precise attack on a specific problem as precise facts about the interpersonal situation in the classroom become available.

3. The innovative efforts of teachers can be highly useful to their colleagues who find themselves facing similar problems in their own classrooms. However, the channels of communication are so poorly developed that little such sharing takes place.

4. To help make educational innovations visible and available to potential adopters usually required descriptive effort and conceptual help by a trained outsider.

5. To stimulate active adoption efforts by colleagues of innovators often required value reeducation to overcome the attitude that using someone else's innovation is a better value than creating one's own.

6. Innovative efforts by the classroom teacher, with informed and sympathetic support from school administration, professional colleagues, and outside resource people are much more likely to succeed than attempts without such support.

Comment by Reviewer

The careful methodology lends special credibility to this study. The findings with respect to the importance of communications and training in supporting readiness to accept innovation are of particular interest.

UTILIZATION BARRIERS

ANALYSIS

Frank, Lawrence K. Fragmentation in the helping professions. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 44–48.

PURPOSE

The author draws attention to the barriers raised by our tendency to specialize.

METHOD

The ideas in this chapter of the book are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

There is a lack of integration of knowledge from the various sciences and social sciences. Individuals tend to draw only from their field of "specialization" when looking for solutions to problems. In addition, each specialist, confident of his own knowledge and techniques, tends to ignore the far-reaching implications of his findings.

Comment by Reviewer

Fragmentation in both science and practice is another barrier to the free flow of information and utilization thereof.

Gallaher, Art, Jr. Directed change in formal organizations: The school system. In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1965, pp. 37–51.

PURPOSE

The author explores the nature of change from the viewpoint of the anthropologist, stressing the importance of the role of an advocate in planned change. He examines the organizational peculiarities of school systems and the implications of these for direct change.

METHOD

The author has based his analysis on his own knowledge, experience, and observations.

FINDINGS AND CONCLUSIONS

1. Change is a natural consequence of human social life. Change can be either directed or nondirected. Directed change is defined as "a structured situation in which an advocate interferes actively and purposefully with the culture of the potential acceptor."

2. There are two major role models for advocacy:

(*a*) The *pragmatic* advocate role model rests on the premise that success or failure in directed change is referable mainly to the advocate's understanding of the content and internal organization of the pattern where change is sought. The role behavior prescribed by this model is concerned mainly with creating a climate that is conducive to change.

(*b*) The *Utopic* model is based on the premise that "one can achieve results best by doing things to, or planning for, people rather than with them." It defines the advocate's role as one of manipulation to gain the acceptance of a given innovation. The author views the pragmatic model as best for achieving genuine change.

3. Gallaher highlights several variables he feels are crucial in the success of directed change programs. They include: (*a*) The perceived prestige of the advocate by members of the target system, (*b*) the dependence upon authority of the members of the target system, (*c*) the expectation of change shared by members of the target system, (*d*) the target system's felt need for change, (*e*) the time factor, and (*f*) the size and divisibility of the target system to be changed.

4. The most significant quality of the school as a formal organization is that it is a service organization.

(*a*) "This means that the prime beneficiary of the organization is the client group, which in turn becomes a crucial variable in determining the limits and kinds of authority that are developed, and the goal orientation that the organization will take."

(*b*) "The concern of local client groups in the power to legitimate authority, a centrifugal tendency, contrasted to the centripetal one of problems in the local system, and the innovations necessary to solve them, deriving from larger systems—could well be the most difficult problem area for educational innovators."

(*c*) The task of professional functionaries is probably more difficult in service organizations than in any other kind. They must serve the collective interest of the client group and at the same time retain their authority and not become subservient to the demands of the client group.

5. It is important for the advocate to have prestige, and/or that members of the target system depend upon his authority in matters of change.

(*a*) The school administrator stands between the client group, technically represented by the school board, and professional and other functionaries who comprise the educational system. His role is essentially a "balancing role." Were he to assume the role of advocate he might reduce the effectiveness in the balancing role, as the role of advocate in the change process almost always involves conflict.

(*b*) Rather than place the burden of change on the shoulders of the school administrator, the author suggests the development of a special role function for the management of educational change.

Comment by Reviewer

Although the focus is rather explicitly on school systems, the variables enumerated by the author in No. 3 would be applicable to a range of settings.

COMMUNICATION

ANALYSIS/DEMONSTRATION

Garvey, W. D., and Griffith, B. C. Communication in a science: The system and its modification. In A. de Reuck and J. Knight (Eds.), *Communication in science: Documentation and automation.* A Ciba Foundation volume. Boston: Little, Brown, 1967, pp. 16–36.*

PURPOSE

This is, in effect, a progress report on an ongoing study, initiated by American Psychological Association in 1961. It is assumed by the authors that the outcomes of the study will ultimately furnish a rational for the management and future development of communication programs in psychology.

The specific purposes of the paper are to describe the total system of dissemination of scientific information in psychology; to point out the order that exists in the system and identify some of the characteristics that contribute to that order; to suggest an approach to communication innovation; and to present examples of three innovations developed and applied to test this approach.

METHOD

The early phases of this study were exploratory, designed to generate descriptive data of what occurs in the communication process and what roles were played by various media. Subsequent phases were analytical, with the purpose of discovering and describing the orderly processes involved in the communication system.

Concerning the three innovations reported briefly in the paper, two of them (listing of manuscripts accepted by journals with long publication lags and preconvention publication of "Proceedings") are described in detail in an earlier journal (see footnote below). Data for testing these innovations were gathered through questionnaires to both researchers and practitioners, with controls established in both studies.

FINDINGS AND CONCLUSIONS

1. The authors delineate the mechanics and flow pattern of information from the time it is generated by the research worker until it can be retrieved from a secondary source. The pattern at the time of study included: Early informal oral reports at colloquia or at small groups of colleagues working in the same area; formal oral reports at State or regional meetings of psychological societies or at national APA meeting (first public announcement of work is abstract published in program of national meeting); postmeeting distribution of copies of presentation; technical reports (often later enlarged into journal articles); submission of manuscripts to journal (approximately 9 months before publication); invited oral presentation at conferences, etc.; distributions of preprints of journal article; journal publication; distribution of journal re-

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*Much of what is contained in this presentation overlaps with other publications by the same authors; specifically, Scientific communication: The dissemination system in psychology and a theoretical framework for planning innovations. "American Psychologist," February 1965, 20(2), 157–164; Scientific communication as a social system. "Science," 1967, 157(3792), 1011–1016; Scientific information exchange in psychology. "Science," 1964, 149(3652), 1655–1659; and Studies of social innovations in scientific communication in psychology. "American Psychologist," 1966, 21(11), 1019–1036. To avoid redundancy, some of the specific data from the four journal articles are incorporated in this summary.

prints; presentation (sometimes) at international meeting—usually after journal publication; appearance in "Psychological Abstracts" 15 months after journal publication; later inclusion in publications focusing on review of current work (sometimes as long as 2 years after journal publication). Approximately 200 readers will be exposed to a journal article. Monographs, like books, usually attract the more academically oriented reader and have a limited distribution.

2. The following features of the communication system are cited:

(*a*) The amount of information flowing through the system which reaches the public is small, compared to that which reaches restricted audiences.

(*b*) Most of what reaches the public is relatively old.

(*c*) Scientists actively seek information relevant to ongoing or planned work.

(*d*) There is an impressive degree of orderliness in the communication system.

(*e*) The outlets chosen by the research workers are often associated with the specific needs of the user and the information is shaped and reshaped to fit the characteristics of channels and the needs of audiences.

(*f*) The goal of most scientific information is publication in an archival journal; the limitations implied by this goal give impetus to development of informal channels.

3. The authors describe the communication system as a "genuine social system"; scientific information exchange consisted largely of interaction between scientists; the major elements within the system were social institutions. "Further, this system was a *closed* social system; not only was the scientist a disseminator and user in the very same system of which he was a creator, but the two gross products of science, its information and its manpower, interacted and fed back into the system continuously to drive it" (p. 10). Its characteristics as a social system contributed to its orderly organization.

4. The second characteristic contributing to orderliness was the dynamic interrelationship of the elements within the system. This interaction has social, economic, and formal dimensions.

(*a*) *Illustrative of the social dimensions.*—If scientists are not satisfied with existing elements to meet information needs, they create new elements (such as new publications, new informal channels.) These new elements affect all existing elements in the system.

(*b*) *Illustrative of the economic dimension.*—Distribution of information without charge by a government agency might extinguish use of and need for abstracting journal.

(*c*) Distinct functions of the formal and informal channels within the system are presented as follows:

(1) Formal elements have a potentially larger audience, including the public; informal elements tend to reach a restricted audience (colleagues, etc.).

(2) Information disseminated through formal channels is more permanently stored and more retrievable than that going through informal channels.

(3) Formal channels carry less current information than do informal channels.

(4) Information carried by formal channels is more carefully monitored than that carried by informal channels.

(5) Formal channels are user-selected; informal channels are disseminator-selected.

(6) There is considerable redundancy in the total system, with informal channels contributing to this more than the formal ones.

(7) Exchange of information through informal channels is more interactive than through formal channels—more emphasis on relevance, more open-ended, more conducive to feedback.

5. The authors' approach to designing and testing innovation in scientific communication encompasses the following elements:

(*a*) Innovation in a science should be preceded by a study of the existing system.

(*b*) The selected innovation should move the entire system in desirable directions.

(*c*) Selected innovations may have an indirect rather than a direct effect in modifying elements within the system.

(*d*) Innovation should promote effective combination of formal and informal elements handling a single body of information.

(*e*) Innovation should take appropriate account of the economic factors involved—that is, of the direct and indirect links between information flow and the flow of resources.

(*f*) Innovations should be so designed that their efficiency and effectiveness can be measured in behavioral and economic terms.

(*g*) An innovation should be seen as a trial only, with built-in mechanisms for modifying or terminating it, if evaluation suggests these courses.

6. The authors identified several critical points in the system at which breakdown in communication occurred, and developed and tested three innovations directed to correcting this breakdown.

(*a*) By means of changes in the operational structure of "Psychological Abstracts," the 15-month lag between publication of information in a scientific journal and its availability in abstract was reduced to 4 months.

(*b*) To close the lag between the time a manuscript is accepted by a scientific journal and the time it is published, they induced long-lag journals to publish listings of accepted manuscripts so that potential users would know of the availability of the information during a period of time when it is, in effect, buried from the public. It was assumed that such early dissemination would be particularly useful to young scientists who may not be members of the author's "invisible college" and hence not hear about the work informally; these same young scientists are often not the recipients of preprints. The publication of the listing did indeed stimulate many requests for copies of the manuscript; many of the requestors reported that their work was modified by contact with the manuscript and its author; in a small number of cases, information flowed from the requestor back to the author. In short, the innovation did speed up dissemination and stimulate informal interchange.

(*c*) The most ambitious of the three innovations was the advance publication of selected papers scheduled for presentation at the 1965 national APA meeting. Through the preconvention publication of "Proceedings", it was hoped to:

  (1) Establish an early and widely accessible means of disseminating current research reports in psychology.

  (2) Offer an alternative to journal publication, reserving traditional archival publication for long reports of major research efforts.

  (3) Facilitate better informal exchange at the convention sessions by virtue of the fact that attendants had the opportunity to familiarize themselves in advance with the research being reported. It was assumed that preconvention publication would—

    (a) enable those attending convention sessions to decide which work was relevant to their own;

    (b) equip scientists with enough advance information to qualify them to discuss specific problems and questions with the author at convention sessions or through correspondence; and

    (c) free up the convention speaker to discuss the implications of his work, since a reasonably public and complete record of his study would have been available.

7. On the basis of their study of the results of the first year (1965) of publication of "Proceedings", they concluded that most of the anticipated benefits enumerated above did indeed ensue. For example, there was improved interaction at convention sessions; considerable interchange of information among scientists in advance of convention; some evidence that respondents' work was in some way modified as the

result of preconvention and convention interchange; and a trend among authors to defer seeking journal publication since a measure of dissemination had already been achieved.

8. The authors enumerate the specific ways in which this particular innovation adhered to the seven criteria they had articulated; since one of those criteria was that the innovation be given a genuine trial and subsequent evaluation, they stress the importance of perceiving the 1965 experience with the publication of "proceedings" as only one segment of an ongoing process.

Comment by Reviewer

The wide-ranging implications of this study can be gaged by the report of the authors (in "Science", September 1967) that a comparable approach has now been introduced into other scientific areas with the establishment of the Johns Hopkins University Center for Research in Scientific Communication. A coordinated effort among the natural sciences, social sciences, engineering, and technology was anticipated, with the possibility cited of comparative studies involving these disciplines.

RESEARCH UTILIZATION FEASIBILITY STUDY

Glaser, Edward M. *A pilot study to determine the feasibility of promoting the use of a systematized care program for patients with chronic obstructive pulmonary disease.* Los Angeles: Human Interaction Research Institute, final report to Social and Rehabilitation Service, Department of Health, Education, and Welfare, project RD–2571–G–67, July 1968.

PURPOSE

In recent years some exercise programs have been developed which, when used in conjunction with other appropriate treatment of patients suffering from chronic airway obstruction, appear to hold promise of contributing significant help. Yet, these exercises, as part of a comprehensive systematized care program, are not widely used, despite many publications in the medical literature citing evidence of their potential value.

The purposes of this study were:

(1) To determine the methods, facilities, and programs currently (1968) used throughout the country for the diagnosis, medical treatment, management, and rehabilitation of patients with chronic obstructive pulmonary disease (COPD).

(2) To make site visits to several of the best known comprehensive treatment centers for COPD which have published promising results from inclusion of exercise programs.

(3) To compare programs and try to arrive at a consensus (at a conference of leaders from several disciplines involved in the treatment of patients with COPD) regarding an optimally effective and widely applicable diagnostic, treatment, and rehabilitation schema incorporating the best features of existing programs.

(4) To identify systematized care modalities which appeared to require further study or cross-validation.

(5) To develop strategies for further research into other important unresolved questions in connection with diagnosis and treatment of COPD. Such research would involve both physicians in private practice and systematized care teams in medical centers.

(6) To develop and carry out plans for promoting dissemination, utilization, and continuing evaluation of the refined and validated systematized care program which should be developed as an outgrowth of the preceding objectives.

METHOD

The methodological steps designed to achieve the purposes were:

(1) To determine current practice through questionnaire, literature review, and selected site visits. The questionnaire was mailed to 1,320 physicians—members of

the American College of Chest Physicians who indicated a specialty of pulmonary disease.

(2) To invite outstanding specialists engaged in the study and treatment of patients with COPD—including chest physicians, pulmonary physiologists, throacic surgeons, nurse specialists, physiatrists, physical therapists, psychiatrists, psychologists, and rehabilitation counselors—to a conference where they could discuss and compare programs, and try to arrive at consensus regarding an optimum systematized care program.

(3) To develop with the conferees planned strategies for further exploration, research tryout and cross-validation of the agreed-upon systematized care program, as well as plan research into other important unresolved questions.

FINDINGS AND CONCLUSIONS

1. Of the 1,320 persons to whom the questionnaire was sent, 307 or 23 percent responded. They provided information regarding facilities and programs which they were using for the diagnosis, treatment, management, and rehabilitation of patients with COPD. (Detailed information and discussion are contained in the report.)

2. The conference achieved general agreement concerning principles for the management of patients with COPD and, in that sense, also made progress in research utilization. The use of breathing retraining, postural drainage, relaxation exercises, and graded conditioning exercises—the underutilized physical medicine techniques which had originally motivated this inquiry—was supported. Many of these treatment programs never before had been described and published in detail. There was unanimous agreement that proper treatment may relieve or lessen symptoms and improve a patient's ability to function independently. To be optimally effective, however, the program should provide patient and family education, home followup, and vocational rehabilitation when needed.

3. The conferees also achieved a sharper identification of important unresolved questions that need further experimental study, and they expressed willingness to collaborate in the future to seek further knowledge with regard to those questions. This represented another outcome to facilitate research utilization.

4. A valuable interdisciplinary network of communication regarding diagnosis and treatment of COPD was developed or strengthened in connection with the conference (attended by 49 persons). The communication network was further strengthened through fairly wide distribution of the final report of this pilot study, which constituted still another outcome in the direction of facilitating information spread about promising treatment methods for COPD.

5. A number of deterrents to the utilization of the recommended systematized care program were identified; e.g.:

(*a*) The need for answers to a number of still unresolved questions such as relative contribution of various treatment components to patient improvement, methods for evaluating the results of treatment, methods of patient selection, significance of home-care followup, etc.

(*b*) Practical considerations, such as time required for treatment, necessary facilities, and personnel, need for continuing physician training, adequacy of dissemination of information, etc.

(*c*) Attitudinal deterrents, such as inertia, threat to status, need to learn new skills, etc.

Comment by Reviewer

One unusual aspect of this study was its service as a catalytic agent in: (1) Bringing together outstanding specialists from the many interrelated health professions concerned with the diagnosis, treatment, management, and rehabilitation of patients with chronic obstructive pulmonary disease; (2) facilitating their agreement (and publication thereof in the conference report) regarding an effective general systematized care program, plus publication of the details or treatment programs in nine different medical centers; (3) planning to obtain criticism, and then undertake further refinement and validation research before attempting to promote widespread utilization of the agreed-upon systematized care program.

RESEARCH UTILIZATION DEMONSTRATION PROJECT

Glaser, Edward M., et al. *Utilization of applicable research and demonstration results.* Washington, D.C.: Final report to Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, project RD–1263–G, 1966.

PURPOSE

The purpose of this project was to study the factors which impede and those which facilitate the spread of innovation in the vocational rehabilitation field; to develop and apply experimentally strategies for overcoming barriers which block initiation and adoption of innovation; and to formulate a range of strategies intended to stimulate innovation.

METHOD

The investigators selected (with the concurrence of VRA) a project of Tacoma Goodwill Industries as the subject of this study. The Tacoma project demonstrated the feasibility of rehabilitating severely retarded young adults to the level of sustained employment. It was hypothesized that more widespread adoption and/or adaption of this relatively effective program might be stimulated by new techniques of disseminating information concerning the project to potential users and by providing psychological consultation to the management staff of potential user agencies. The information techniques which were tested were: (1) A brief, readable booklet describing the project; (2) a conference to facilitate an interchange of points of view and experiences related to the project; (3) the dispatching of an experienced spokesman for the demonstration project to provide onsite consultation to potential user agencies. Psychological consultation was provided to five sheltered workshops which were perceived as potential users of a program comparable to the Tacoma project, with five comparable workshops serving as controls. A number of instruments were designed to assess the impact of these strategies; these were augmented by informal and anecdotal feedback.

FINDINGS AND CONCLUSIONS

1. The chances of impact are increased if promising research or demonstration findings are reported in readable, brief, and nontechnical form and are widely distributed to potential users, but this form of information dissemination does not produce as pronounced an effect as had been anticipated. Its impact is greatest where interest has already been established.

2. The study clearly demonstrated that if potential users attend a conference where they can discuss an innovation and see it in operation, adoption of the innovation will be significantly facilitated.

3. Potential users who had received the nontechnical report and had participated in the site visit/conference were not additionally stimulated, to an appreciable amount, by a "missionary" visit from a representative of the Tacoma project.

4. Psychological consultation to management of sheltered workshops helped those organizations change more rapidly than the control group and made them more receptive to innovation.

5. Beyond the foregoing findings, which stemmed directly from the experimental work carried on in the project being reported, the investigators formulated a number of strategies for adoption of innovation in vocational rehabilitation. Among the highlights are the following:

(*a*) Innovation does not spread automatically. It tends to be impeded by barriers, both in the processes of communication and in the attitudes of the people and organizations who can be considered potential users.

(*b*) Communications concerning innovations should be credible and stimulating. These communications should be a factor in the initial planning of a research project, and should be provided for, in terms of budget and time.

(*c*) Potential users of the findings of a research project should be invited to participate in the planning of the project.

(*d*) Since there is evidence that personal contact with innovators may be a crucial condition for the optimal dissemination of new ideas, it might be productive strategy for innovators of successful projects to meet with others in the same and related fields by means of special regional or national meetings.

(*e*) Tandem teams consisting of a rehabilitation expert and a psychological consultant to management might effectively serve as change agents in the vocational rehabilitation field.

Comment by Reviewer

This project is applicable, in its entirety, to research utilization among mental health agencies or, for that matter, in a number of other organizational settings.

RESEARCH UTILIZATION
EXPERIMENTAL STUDY/ANALYSIS

Glaser, E. M., and Ross, H. L. *Increasing the utilization of applied research results.* Final report to National Institute of Mental Health, grant No. 5 R12–MH–09250–02. Los Angeles, Calif.: Human Interaction Research Institute, 1971.

PURPOSE

This study undertook to investigate what deters organizations from putting promising innovations into practice; to apply and test various strategies which are designed to make these organizations (and their professional leaders) more willing to accept a specific innovation; and (as an outgrowth of the findings of the foregoing) to explore the psychological, sociological, economic, and institutional forces which inhibit or facilitate change.

METHOD

The specific innovation selected for the experimental phase of the study was saturation group therapy (SGT), a format for the delivery of psychotherapy in a prolonged series of weekend group treatment sessions. The innovation selected met the following criteria: Was potentially useful to a broad spectrum of mental health agencies and applicable to certain categories of patients; was replicable without excessive financial costs or unique skills; presented discernible difficulties in implementation; was credible to agency decisionmakers; was in current operation so that it could be observed in action.

Major categories of users of this treatment modality in the country were identified and assigned to either experimental (80 percent) or control (20 percent) status; total $N = 1,770$.

The dissemination strategies employed were: A descriptive pamphlet related to SGT; a consultation visit to the user agency by the director of SGT; a visit and conference at the site at which SGT was an ongoing demonstration project; a consultation from the SGT director to agencies *after* their representatives had taken part in a site visit.

All organizations in the experimental group and half in the control group were first sent the pamphlet. Organizations which then participated in further dissemination efforts were self-selected. A series of questionnaires, dispatched at appropriate times in the course of the study, undertook to assess the respondents' changing levels of awareness of SGT, their attitudes toward it and toward adoption or adaptation of this innovation at their agencies. These findings served as measurements of the relative impact of the techniques being tested.

To gain additional insight into the underlying attitudes and patterns of the target organizations with regard to innovation, open-ended interviews were conducted with personnel at 33 such agencies.

FINDINGS AND CONCLUSIONS

1. Despite the extensive dissemination efforts, the number of adoptions or adaptations was surprisingly small, although there was evidence that agency decisionmakers increased their understanding of SGT, and, in some instances, developed hospitable attitudes toward its use. This finding suggested that the practical barriers

(money, personnel, facilities) to adoption of SGT overshadowed intellectual acceptance of it.

2. Findings with respect to the specific dissemination techniques were as follows:

(*a*) The pamphlet (when the recipient was alerted by an accompanying questionnaire) provided a basis for forming a general inclination or set for or against SGT; it stimulated intellectual interest, but did little more.

(*b*) The consultation visits were informative, clarified some issues, but did not dissipate the participants' doubts about the feasibility of implementing SGT in their agencies.

(*c*) The site visit and conference stimulated enough enthusiasm among most participants to create specific advocacy for SGT; participants returned to their home agencies willing to search for ways to overcome economic and organizational barriers; they were, however, in most instances unable to transmit their positive feelings to their coworkers.

(*d*) The postsite visit consultation had a booster effect on agency interest but was not sufficient to overcome what the agency perceived as barriers to implementation.

3. The investigators hypothesized that resistance to adoption of SGT, despite intensive dissemination strategies, was related, in part, to characteristics of the innovation itself. The innovation was assessed in terms of criteria identified by earlier studies of innovation, and it was determined that potential users of SGT perceived it as having limited relevance, a high potential for incompatibility, dubious relative advantage, a high degree of complexity, and potential difficulties with regard to reversibility, divisibility, trialability, and credibility. The extent of these difficulties was underestimated when the project was selected.

4. In assessing factors which have a bearing on an agency's willingness to innovate, the investigators suggested that innovative agencies tend to be those characterized by high morale; a practice of autocritical review of mission and performance thereof; staff participation in decisionmaking; responsiveness to community needs; staff rewards based on performance rather than status; and a minimum of arbitrary supervision. In the less innovative agencies, there is likely to be strong centralization and hierarchical control; lack of awareness of agency mission; hostility engendered by a staff/administration power struggle; rigid commitment to orthodoxies (either individual or shared).

5. On the assumption that willingness to change is not sufficient without organizational means, the investigators formulated a set of operating conditions which would provide an organizational vehicle for effecting change. These conditions are: Instituting regular mission review; assessing program effectiveness; disseminating knowledge about alternative practices; providing opportunity for advocacy; providing a means for making decisions; providing a way of sustaining commitment; and having control over sufficient resources.

6. Finally, the investigators reevaluated the dissemination strategies which had been utilized in the experimental phases of the project being reported, and recommended certain refinement in future efforts to promote utilization. Significant among these refinements are: (*a*) More careful screening of innovations to be disseminated; (*b*) fuller involvement of potential users toward this end; (*c*) more careful selection of target agencies to be recipients of dissemination efforts, with particular attention to willingness and capacity to innovate.

Comment by Reviewer

This study builds significantly on prior work done by the investigators in the field of research utilization, and is particularly insightful in delineating organizational attributes within mental health agencies which are relevant to accepting innovation.

RESEARCH UTILIZATION
SURVEY METHOD

Glaser, E. M., and Taylor, S. *Factors influencing the success of applied research.* Washington, D.C.: National Institute of Mental Health, Department of Health, Education, and Welfare, final report on contract No. 43-67-1365, January 1969.

PURPOSE

Five successful and five less successful applied research projects which had been carried out through grants from the National Institute of Mental Health were studied by the Human Interaction Research Institute of Los Angeles in an effort to identify and document some of the factors which promote or impede—

(1) the effective conduct of a project; and
(2) the achievement of project objectives, including the production of clear, cogent, useful results which are adequately disseminated to potential users.

This study was requested by the Applied Research Branch of NIMH in order to obtain information which might be useful in improving—

(1) the selection of projects for funding; and
(2) NIMH consultation with grantees.

METHOD

In order to gain insight regarding the process of applied research, the life cycle of a project was conceived as being divided into six stages: Idea, design, funding, research, development and dissemination of findings, utilization.

Principal investigators, administrators, and practitioner-utilizers were interviewed in a climate of confidentiality and frankness in an effort to obtain the benefit of their unique perspectives regarding what happened during the life cycle of their respective applied research projects.

FINDINGS AND CONCLUSIONS

1. *Characteristics of the Successful Project.*

(*a*) The successful project was characterized by high communication awareness and involvement with persons and groups within and outside the immediate environment from its earliest moments. The project staff made efforts to induce interest and cooperation from a wide group of supporters and potential users. Interaction and communication proceeded at a high rate through both formal and informal channels. Potential obstacles were shared concerns. The resolution processes often provided unanticipated benefit and strengthened the project. The development and maintenance of a network of communication took time and effort, but observable rewards justified the expenditure.

(*b*) The research was designed by the principal investigator, who devoted full time to the project. The host agency indicated its commitment by contributions of services and supplementary funds. The focus of the research was aimed at a felt need which enjoyed a shared interest from other people. Ipso facto, therefore, the product was readily marketable. Potential consumers were involved and informed. They encouraged early efforts at dissemination of findings, and were ready to consider implications for utilization.

(*c*) Throughout the life of the project there was ample evidence of adequate project structure (i.e., committees, liaison, linkage). There was leadership capability, with a consensus among those involved regarding priority of goals. Dissemination was planned for, and a higher level of utilization was achieved. The communication component paid off again and again: when severe problems were encountered by successful projects, their base of involved supporters was sufficient to cope with the problems.

2. *Characteristics of the Less Successful Project.*

(*a*) While there was some interaction and internal communication, there was little sustained effort to open up the process to others. Communication was sporadic and involvement was limited to a small nucleus. The problem to be investigated may well have appealed to a constituency of interactors, but involvement was not welcomed. In fact, there was a pervasive and discernible quality of insularity. Administrators and practitioners resented being excluded.

(*b*) Characterized by calm during the idea, design, and funding stages (in contrast to the successful projects which were dynamic and laden with conflict), these projects erupted soon after the research stage began. Problems developed suddenly and often were unanticipated. Coping efforts were hindered by the fact that part-time principal investigators did not have the time to devote to resolution efforts. Nor did they have an invested group of supporters to help and share responsibility. Each problem reverberated throughout the project, causing extensive shock. Plans were delayed or abandoned en route. Despite the problems, there were successful findings worth reporting, but there was insufficient time for reports and little "push" comparable to the encouragement received by successful projects.

Recommendations

1. Applied research projects should energetically seek the reactions and contributions of potential users, including both practitioners and administrators, from the idea stage through to the completion of the research.

2. Whenever feasible, formal boards or special committees should be formed to serve as responsible advisers to research projects.

3. The original research questions, subsequent design and communication of progress or findings should incorporate issues which are of concern and interest to the agency personnel who will be cooperating with or assisting the project.

4. The principal investigator should have either written the research proposal or be intimately familiar with all of its various aspects.

5. From the beginning, effort should be made to develop a network of communication with others who may be interested in or of help to the research in order to build widespread awareness and appropriate involvement.

6. The process of seeking funds should be a relatively open and shared experience, in order to benefit from the suggestions of other people, and to insure that the budget will be realistic.

7. Contributions of staff time and other services by agencies should be thoroughly discussed with the parties who will be asked to provide the assistance.

8. A written agreement outlining reciprocal responsibilities in sufficient detail to assure that there is a meeting of minds between the research team and the agency should be developed before the research begins.

9. The consultative services of funding organizations should (if available) be utilized prior to submitting applications for support.

10. Site visits by funding agency staff to potential grant recipients should occur wherever possible, and should include some interaction with middle-level supervision and practioners who will be working with the research project.

11. Pilot projects or reconnaissance phases should take place before the major commitments of time and money are made. Ideally, this would allow sufficient time for evaluation of the initial results and provide a realistic assessment of needs and potential problems.

12. If problems develop during the conduct of the research, every effort should be made to open two-way communication with the entire project staff and perhaps with added inputs from appropriate outside consultants, so that the project can benefit from the suggestions and reactions of all who are legitimately concerned.

13. Principal investigators should devote full or at least a major portion of their time to the research so they can: (*a*) Maintain an effective communication network; (*b*) work to maintain linkage with the system; (*c*) have time available to work through solutions to problems.

14. Potential consumer groups should be informed concerning promising findings, through site visits, special institutes and reports which are focused to the needs of service settings.

15. Before the final research findings are reported, progress reports, discussion drafts, and other means should be utilized to seek feedback from a sample of potential users.

16. Wherever the staff of an agency contrib-

utes to data collection of other research activities, special efforts should be made to involve them in the study, and repay their investment by discussing the research findings in person, as well as by issuing reports.

17. Members of the several professional disciplines represented on the research team should be encouraged to publish and report to their colleagues since this facilitates interpretation to a wide audience of potential consumers.

18. Workshops and institutes should be scheduled before journal publication, since this serves to sharpen the focus of findings on implications for practice.

19. Administrators and practitioners, as well as researchers, should consider possible means for utilizing valuable research findings long before the project terminates.

20. Sufficient time, money, and skill should be allocated to dissemination and utilization, rather than leaving it to chance or to meager funds left over as the project draws to a close.

21. Funding organizations should develop a staff of consultants who can work with project personnel with respect to dissemination and utilization matters long before the project ends and staff scatters. Projects with a large number of potential users should have a dissemination and utilization expert available through the life of the project, either as a full-time staff member or a consultant, to plan and implement the foregoing functions.

22. A retrieval system should be developed by funding agencies to recover and disseminate research information which might not otherwise reach potential users.

23. Each regional office of Federal funding agencies should be staffed with a person primarily responsible for applied research, who will be in close communication with the central office and can: Consult with projects as a knowledgeable helper; keep abreast of relevant research in the given field (such as mental health services delivery) throughout the country; share this information with project personnel; stimulate dissemination and utilization efforts; and in general serve as a knowledge utilization specialist.

Comment by Reviewer

The findings presented in this are particularly significant in that they are based on a systematic study of the problem of research utilization. The authors' recommendations provide concrete guidelines for the planning and development of research projects so as to maximize utilization potential.

RESEARCH UTILIZATION
REPORT OF SEMINAR

Glaser, E. M., and Wrenn, C. G. *Putting research, experimental, and demonstration findings to use.* Washington, D.C.: Office of Manpower Policy, Evaluation and Research, U.S. Department of Labor, 1966.

PURPOSE

This report seeks to pinpoint ways in which funding agencies can contribute to closing the gap between new knowledge and everyday practice.

METHOD

Representatives of a number of governmental agencies (and a few nongovernmental organizations) met in a 2-day seminar in Washington. Format for the seminar had been determined by a planning committee conference involving 15 participants. Seminar attendants selected topics on which they wanted primary focus and discussed these topics extensively in small groups. Conclusions and recommendations emerging from those discussions constitute the content of the report. Draft of the report was circulated among participants for comment and revision, and final report represents consensus derived from this editorial collaboration.

FINDINGS AND CONCLUSIONS

1. *Stimulating Good Proposal Ideas.*

(*a*) Rather than insist on a full-scale proposal, solicit an early, informal letter describing essence of proposal. Hence potential researcher can get initial response from funding agency without large investment.

(*b*) Offer a small subsidy for preparation of detailed proposal; this might make it feasible for persons to think about needed R & D and E & D projects who could not otherwise invest the time.

(*c*) Prepare subject matter reviews of the state of the art to help disseminate already existing knowledge and aid in guiding potential researchers to undertake quests which will fill significant gaps (that is, projects for which ultimate utilization will be more likely).

2. *Improving the Grant or Contract Negotiation Procedure To Achieve More Effective Utilization.*

(*a*) Require that formal proposals include explicit statements regarding plans for utilization (desired impact, target audience, strategies for dissemination, etc.).

(*b*) Clarify criteria for accepting proposals.*

(*c*) Make clear the function of advisory panels and review committees.*

(*d*) Encourage the parallel exploration of alternative design studies and/or pilot approaches to a complex problem.

(*e*) Involve outside consultants on problem of designing projects suitable for ultimate utilization.

3. *Improving the Interaction Between Funder and Grantee or Contractor.*

(*a*) The grantor agency should be appropriately staffed so that it can maintain a close relationship with the grantee in order to increase eventual utilization (site visits, technical assistance, improved funding arrangements, conferences or workshops of potential users, etc.).

(*b*) Requirements for reporting should be supportive of ultimate goals of dissemination and utilization.

4. *Clarifying the Kinds of Action Which Might Result From E. & D. Project Findings.*

(*a*) An E. & D. project might have as a legitimate objective one or more of the following kinds of changes: Spread of a new technique to other comparable settings; continuation of demonstration project on more permanent basis; spinoff or acceptance by ongoing agency other than original funder; spillover in which demonstration acts as catalyst for change rather than generates direct and explicit adoption.

(*b*) Among the effective strategies for getting change accepted in an institutional setting are: Setting up a demonstration within the institution in the hope that exposure will win converts; setting up the project in a new and thus competing institution and thus exert "gadfly" pressure; invoking outside pressure (such as organized citizen pressure) for change.

(*c*) Change will be accepted in direct proportion to the extent to which potential users recognize that their self-interest is advanced by the change.

5. *Translating Findings Into Action.*

(*a*) Potential users should be identified at the outset and should be invited to function as consultants and coarchitects throughout the research and/or demonstration phase of the project.

(*b*) Credible and competent evaluation of findings should precede intensive effort for wide utilization.

(*c*) More research is needed to determine what kinds of projects have the best change of user impact—and why.

(*d*) Among the strategies which promote the movement of findings into action are: Availability of well-written, credible reports; discriminating dissemination of reports; person-to-person transmission of findings through conferences, site visits, seminars, etc.; use of human link (change agent) between innovator and potential user; use of mobile teams of resource persons and change consultants to stimulate innovation; strengthening credibility of initial demonstration through replication, reiteration, and reaffirmation.

6. *Training of Washington E & D and R & D Program Staffs.*—A range of skills are sug-

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*Only tangentially related to utilization.

gested as requisite for program staff of funding agency if that staff is to work effectively with grantee staff to maximize dissemination and utilization. These include subject matter knowledge, competence in social sciences and/or business administration, understanding of research methodology, capacity to function as disseminator, ability to cope constructively with conflict.

7. *Developing Better Interagency Coordination in Investigating Given Problem Areas.*—Because many funding agencies work in common or overlapping subject matter areas and because all share the objective of getting the best utilization payoff for their research investment, the following coordination strategies were advanced:

(*a*) Establish interagency project review committee.
(*b*) Establish joint priorities and consider need for replication of demonstrations.
(*c*) Establish data retrieval system.
(*d*) Conduct subject matter conferences.

As an extension of the recommendation for interagency coordination, the seminar suggested a number of followup steps which would preserve and strengthen the interchange achieved during the seminar: Expanding the participating group for subsequent seminars, creating an annual conference on utilization, interchange of utilization case studies, etc.

Comment by Reviewer

Although this report has a specific focus (Federal funding agencies) many of the concepts it articulates are relevant to all change agents.

RESEARCH UTILIZATION
ANALYSIS

Glock, Charles Y. Applied social research: Some conditions affecting its utilization. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961, pp. 1–19.

PURPOSE

To identify the conditions under which maximum utilization of social research occurs—more specifically, to distill from the available evidence some of the principles which determine whether or not applied social research, once commissioned and executed, is used.

METHOD

The evidence is drawn from the experience of the Bureau of Applied Social Research, Columbia University (where the author has served as director) and from case studies of other research organizations known to the author. All case studies cited were situations in which the client (that is, the user of the research findings) has specifically requested that the research be carried out—in other words, these were problems in search of solutions.

FINDINGS AND CONCLUSIONS

1. *Nature of the Problem.*

(*a*) Research is most often commissioned to serve one or more of three functions: To evaluate, to diagnose, to prescribe. Social research is most suitable for answering evaluative questions; the client's motivation for commission research is usually to get prescriptive aid. Accordingly, the best research on an evaluative problem is likely to be less useful to a client than relatively inadequate research on a prescriptive problem.
(*b*) Research tends to be usable when it identifies variables which are inherently controllable and where the client organization has the necessary manipulative power to exert that control.

2. *The Role of the Client.*

Since all case material in this study is based on clients who commissioned the research projects, it might be assumed that they were uniformly predisposed to utilize the findings. However, the following significant variables were identified:

(*a*) Those organizations with a long record of research activity and with a research unit highly integrated into their operations were most likely to apply the findings of social research.

(*b*) Applied research is most effectively used where the decision to use it is made at the top policymaking level; where there is interested and committed top management which encourages imaginative use of research throughout the organization; and where the organization is flexible enough to modify its procedures to accommodate the innovation.

3. *The Role of the Research Organization.*

(*a*) A favorable environment for maximal utilization is likely to exist where the interests of the research organization parallel those of the sponsor (this occurs most frequently when the research has a humanitarian content).

(*b*) Certain ethical problems are sometimes relevant to utilization: There may be a discrepancy between the client's image of the ultimate utility of the research findings and their actual potential utility; some compromise in research standards may be called for to accommodate to the client's administrative constraints; researchers are sometimes under pressure to interpret findings beyond what the data allow.

(*c*) The research organization's competence has a direct bearing on the utility of the research it produces. Independent research organizations have a high degree of technical competence; on the other hand, research activity which is incorporated in the structure of the client organization has the benefit of accumulated experience in the specific subject matter area. The latter arrangement is probably conducive to maximal utilization.

4. *Interaction Between Client and Research Organization.*

(*a*) For optimum interaction (in terms not only of using the research, but also of formulating it and conducting it), the client organization should be represented by its policymaker and a qualified research technician; the research organization by its chief executive and the project director.

(*b*) Interaction should, ideally, serve these communicative functions: To clarify the practical objectives of the research, to establish a research design well suited to satisfying these objectives, to monitor the research while it is in process, to identify the applied implications of the findings, to settle administrative and financial arrangements. (In point of fact, interaction rarely covers all these points.)

(*c*) The more frequent the interaction, the better the outlook for utilization.

5. *The Research Process.*

(*a*) Studies which are directed at testing a set of clearly stated propositions are more likely to be used than those which are principally concerned with compiling information.

(*b*) A research study which is comprehensive (incorporates all variables) and which is carried out with a high level of technical proficiency has an enhanced prospect for utilization.

6. *Conclusions.*

(*a*) There is need for a middleman who is trained in the method of research and the art of utilization.

(*b*) There is need for wider circulation of relevant case studies.

(*c*) There is need to know more about the applied functions which social research can and cannot serve.

Comment by Reviewer

Principles are well illustrated by citation of extensive case material.

RESEARCH UTILIZATION
RESEARCH AND ANALYSIS

Goldin, G. J., Margolin, K. N., and Stotsky, B. A. The utilization of rehabilitation research: Concepts, principles, and research. *Northeastern Studies in Vocational Rehabilitation.* 1969, No. 6.

PURPOSE

The purpose of this monograph is to report the ideas and findings of the New England Rehabilitation Research Institute developed through efforts to achieve utilization of its own research results in the core area of motivation and dependency. The authors also present their own systems model of the utilization process.

METHOD

The principles and concepts discussed in the monograph are based upon a brief review of relevant literature, the experiences of the authors, and the research and observations of the New England Rehabilitation Research Institute.

The specific utilization research reported in the monograph consisted of a readership survey on the use of two previously published monographs. The Institute mailed 1,000 questionnaires regarding each of the two monographs. The results are based on a 25.4-percent return of one or both questionnaires. The questions related to the respondents' impressions of the monographs, their specific use of them, and if and how the monographs stimulated the readers' thinking.

FINDINGS AND CONCLUSIONS

1. The results of the readership study indicated that the major uses of the two publications were for a background or literature survey, in preparing a talk or paper, or as part of inservice training. The documents were least used for preparing a research design or proposal, in clinical practice, in administrative planning, and in social or community planning. The particular use made of the monograph was directly related to the professional setting of the reader. The authors observe that there is a need for increased training and motivation in the utilization of research for professionals at the counseling agency level, especially in the area of clinical practice.

2. Of the readers who returned questionnaires, 52 percent stated that they had read all of the first monograph, while 35 percent had read the other document in its entirety. The authors suggest that increased practical use can be achieved in the utilization of such monographs if the implications of the research results are very clearly stated, with some clinical applications spelled out and specific programs for rehabilitation are suggested. Also, results might be more widely used if the implications of the research were woven throughout the monograph. Moreover, research publications must compete with a wide variety of other documents for the attention of potential readers; hence, consideration needs to be given to the development of an attractive cover and format, and material should be written in such a way so as to capture the reader's interest in the publication in the first few pages.

3. The monograph treats research utilization as a psychosocial process involving a dynamic interaction of four major subsystems. The process through which needs are satisfied and problems become resolved can be seen as taking place through the occurrence of a sequence of acts which transpired as a part of a specific system. The efficiency and the effectiveness with which the utilization subsystems operate is determined largely by the level and quality of communication that can be developed within and between these subsystems.

(*a*) *The information-education system.*—The function of this system is the production and transmission of knowledge. Whether or not this system acts autonomously or in interaction with the other utilization subsystems depends upon the existence of a felt need for change in the area to which the particular knowledge developed through the research is concerned. For optimum functioning of this subsystem in the process of research utilization, researchers need to be instilled with a "utilization mindedness" so that they will become concerned with building utilization potential into the research design at the outset of the research.

(*b*) *The diffusion system.*—This system must challenge existing norms and values of the social system upon which it is acting at a given time.

(*c*) *The change system.*—The change system differs from the diffusion system in that it involves the conscious and planned use of a mediating force, which serves to mediate between the agencies of the information-education system and the targets of change.

(*d*) *The action system.*—This system is concerned with the mobilization of broad scale financial support for the promotion of utilization, and involves the setting up of practical steps to be taken to spread the adoption of innovation and change.

4. Within the structure of the above subsystems, research utilization occurs as a result of five contiguous phases: Results dissemination, information reception, conceptual comprehension, psychosocial acceptance, and internalized assimilation. Complete utilization occurs only when individuals perform in the innovated manner without much thought or consideration of the new procedure or idea.

5. Dissemination of results needs to consider both scope and selectivity, in order to encompass the possibility of attracting the less likely users and also beaming dissemination outputs to selected individuals who are in the best positions to utilize research. The authors suggest the possibility of developing techniques of aggressive dissemination. Using the concept of aggressive casework as a model, the institute has experimented with this approach and had encouraging results. The concept of aggressive dissemination involves not only the selection of a target audience of key individuals, but also stimulating the motivation of these individuals to become receptors of the information.

6. Another key variable in research utilization is the clarity and attractiveness with which the research results are written. In promoting information reception and conceptual comprehension the authors have developed a bilevel approach wherein they gear each of their reports to two target audiences, thereby extending the potential readership.

7. Finally, utilization depends upon the extent to which psychological and sociological resistance to change can be overcome. That is, the research results must be emotionally acceptable to the individuals responsible for implementation and socially acceptable to the organization which they affect.

8. The authors draw the broad conclusion that, "maximum utilization of rehabilitation research depends upon the development of a partnership between the researcher and the practitioner and rehabilitation administrator." For this to occur, an internalized rehabilitation research utilization mindedness within the professional value system of the rehabilitation practitioner and administrator is needed.

9. In order to establish this partnership of value systems, the authors offer the following recommendations:

(*a*) In order to inculcate an orientation to research utilization the rehabilitation practioner should be expected to review and report on a specified number of (two or three) research studies which have applicability to his work. This would be considered as part of his job description and pointed out to him when he is hired. In other words, an attempt should be made to structure research utilization into the practitioner's professional role.

(*b*) A national research utilization committee should be created and composed of rehabilitation researchers, practitioners, and administrators in key positions to assist the Social and Rehabilitation Service research utilization branch in an advisory capacity and to stimulate the utilization of rehabilitation research.

(*c*) Research utilization committees which are counterparts of the National Rehabilitation Research Committee should be organized at the agency level, particularly in the State rehabilitation agency.

(*d*) The academic training of the rehabilitation researcher should include material on the principles of research utilization with emphasis on the psychosocial aspects of innovation and change.

(*e*) The advocacy principle should be employed in the utilization of particularly important applications of research findings. For example, organizations such as the National Rehabilitation Association could be instrumental in advocating the adoption of certain innovations which research established as having important value.

(*f*) A section outlining utilization plans could be included in research proposals or grant applications. While it might not be possible to follow these plans closely following completion of the research, at least guidelines for the use of the particular research would be established.

(*g*) Rehabilitation Research Institutes, research and training centers, as well as the research departments of State rehabilitation agencies and private rehabilitation agencies, could work on the development of an active consultation program in the utilization of rehabilitation research.

(*h*) Since face-to-face psychosocial transactions are an important factor in the dissemination, interpretation, and acceptance of research results, the frequency of rehabilitation research utilization conferences should be increased, not only on the national level but on the local level as well.

(*i*) In research courses, both on the undergraduate and graduate level, increased emphasis should be placed on the writing of research reports with the goal of utilization in view. Thus, such factors as clarity, comprehension, and comprehensiveness would be stressed.

(*j*) Intelligent consumption of research results requires training and understanding. It is, therefore, recommended that inservice training be designed for rehabilitation practitioners which will focus upon the understanding and application of research results, particularly in the clinical area.

(*k*) Finally, it is important to emphasize serious consideration of the aggressive or outreach concept in the selective dissemination of research results. There are key practitioners, administrators, and planners in the professional rehabilitation community who would consider the application of research results if these were placed before them but would not mobilize sufficient goal directedness to actively seek out new ideas and the results of research.

Comment by Reviewer

Although addressed to the field of rehabilitation, this publication has general applicability. The content appears to hold most value for researchers and academicians. A number of the recommendations offered are applicable to planning at the national level.

RESEARCH-PRACTICE RELATIONSHIP

ANALYSIS

Greenwood, Ernest. The practice of science and the science of practice. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 73–82.

PURPOSE

The author contrasts science and practice and outlines a science-practice relationship that may prove useful in bridging the researcher-practitioner gap.

METHOD

The ideas in this chapter of the book are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. The function of science is the description and explanation of nature in all its manifestations, while the function of practice is the achievement of controlled changes in natural relationships by means of procedures that are scientifically based.

2. Distinguishing scientific theory from practice theory, Greenwood states: "Scientific theory consists of laws describing and explaining nature;

practice theory consists of principles prescribing ways of controlling nature." The aim of practice is control. The control function of a practice is bound to exert effects upon the patterns of thinking and behaving of the practitioner. The elements of practice are action, individual focus, artistry, and intuition.

3. Greenwood points out the existence of hybrids; the applied-oriented scientist and the theory-oriented practitioner. These individuals are the ones who can join forces in the middle group between science and practice to help achieve a flow of information between the two.

4. "If we are convinced of the potential benefits of the science-practice collaboration, then we must create the social structure with its built-in rewards to foster and promote it. We cannot rely on isolated applied-oriented scientists and theory-oriented practitioners to collaborate on a voluntary, individual, and informal basis."

Comment by Reviewer

Greenwood advocates the creation of a structure that gives room to individuals who are willing to bridge the gap between science and practice. No practical suggestions are included on how one goes about creating such a structure.

ORGANIZATIONAL CHANGE

SURVEY

Greiner, Larry E. Patterns of organization change. *Harvard Business Review*, 1967, 45, 119–130.

PURPOSE

This article, part of a larger study on organizational development, deals with large-scale organizational change—its justification, the processes of problem recognition and problem solving, and recommendations for future action. It attempts to show how a "successful" change differs from an "unsuccessful" one.

METHOD

The author surveyed studies on organizational change, dividing them into three categories: Five reporting "successful" organizational changes; six showing similar "success" patterns, but containing somewhat less complete information; seven which reveal "less successful" change patterns. The conclusions expressed in this article are drawn from an examination of these 18 studies.

FINDINGS AND CONCLUSIONS

1. Recently more and more top managements have begun to realize that fragmented changes are seldom effective in stemming the underlying tides of stagnation and complacency that can subtly creep into a profitable and growing organization.

2. Rigid and uncreative attitudes can be recognized in managerial behavior that—

(*a*) is oriented more to the past than to the future;

(*b*) recognizes the obligations of ritual more than the challenge of current problems; and,

(*c*) owes allegiance more to department goals than to overall company objectives.

3. A revolutionary attitude toward change may be necessary to bridge the gap between a dynamic environment and a stagnant organization.

4. Approaches to the introduction of change can be located along a power distribution continuum: those which rely on *unilateral* authority, those which rely on *shared* authority, and those in which authority is *delegated.*

(*a*) The use of unilateral authority appears in three forms: By decree, assuming that people are highly rational and best motivated by authoritative decisions; by replacement of key persons, assuming that organization problems tend to reside in a few individuals, and that replacing these people will bring about sweeping and basic changes; and by structure, assuming that people behave in close agreement with the structure and technology governing them.

(*b*) The shared approach takes two forms: Group problem solving, in which problem definition as well as decisionmaking is shared with lower echelons; and group decisionmaking, where problems still tend to be defined unilaterally from above, but lower level groups are usually left free to develop and choose between solutions.

(*c*) The delegated approach also takes two forms: Case discussion, in which a group leader helps define the problem, but leaves its analysis and solution to individual group members; and T-group sessions, usually confined to top management with the hope that beneficial spillover will result for the rest of the organizaion. The primary emphasis here is on increasing an individual's self-awareness and sensitivity to group social processes.

5. Successful change patterns generally: Spread throughout the organization to include and affect many people; produce positive changes in line and staff attitudes; prompt people to behave more effectively in solving problems and relating to others; result in improved organizational performance. The less successful changes fall short on all of these dimensions.

6. Those organizations reporting successful change show distinctly similar patterns in the evolution of change.

7. The most striking overall characteristic of the less successful studies is a lack of consistency —in starting points, in sequence of steps, and in major approaches to the introduction of change. The less successful attempts used approaches which lie closer to the extreme ends of the power distribution continuum, while the more successful projects tended to use shared authority.

8. The dynamics of successful organizational change may be pictured as follows: pressure on top management → arousal to take action → intervention at the top → reorientation to internal problems → diagnosis of problem areas → recognition of specific provlems → invention of new solutions → commitment to new courses of action → experimentation with new solutions → search for results → reinforcement from positive results → acceptance of new practice.

9. In anticipating future change, four positive actions are called for—

(*a*) revision of egocentric notions that organizational change is heavily dependent on a master blueprint designed and executed in one fell swoop;

(*b*) abandonment of the idea that organizational change is for "those people downstairs," who are somehow perceived as less intelligent and less productive than "those upstairs;"

(*c*) reduction of fond attachments for both unilateral and delegated approaches to change;

(*d*) awareness of the need for managers, consultants, skeptics, and researchers to become less parochial in their viewpoints.

Comment by Reviewer

This article follows from the first tentative ideas to the final evaluation the steps which seem to produce both successful and less successful organizational change. It offers guidelines for those organizations contemplating large-scale reorganization.

ORGANIZATIONAL CHANGE
ANALYSIS

Griffiths, Daniel E. Administrative theory and change in organizations. In M. B. Miles (ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 425–436.

PURPOSE

The purpose of the paper is to state a theory of administrative change which will account for some of the commonly made observations concerning change in organizations.

METHOD

The model employed in the formulation of this theory is the system theory. An open system is related to and makes exchanges with its environment—in contrast to a closed system, which does neither. Open systems tend toward a steady state—that is, change is not characteristic of them. It is assumed that an organization is an open system, comprised of human interactions, that maintains a definite boundary. Administration is considered an open subsystem and the environment a suprasystem. On the basis of the foregoing assumptions, the author sets forth a number of propositions (see below).

FINDINGS AND CONCLUSIONS

1. The major impetus for change in an organization is from the outside.

2. The degree and duration of change is directly proportional to the intensity of the stimulus from the suprasystem.

3. Change in an organization is more probable if the successor to the chief administrator is from outside the organization than if he is from the inside.

4. Living systems respond to continuously increasing stress first by a lag in response, then by an overcompensatory response, and finally by catastrophic collapse of the system.

5. The number of innovations is inversely proportional to the tenure of the chief administrator.

6. The more hierarchical the structure of an organization, the less the possibility of change.

7. When change in an organization does occur, it will tend to occur from the top down, not from the bottom up.

8. The more functional the dynamic interplay of subsystems, the less the change in an organization (or the don't-rock-the-boat phenomenon).

Comment by Reviewer

Although the eight propositions are supported by considerable discussion, the author does not purport to prove them. Accordingly, they should be perceived as formulations only.

EDUCATIONAL CHANGE
THEORETICAL ANALYSIS

Guba, Egon G. Methodological strategies for educational change. Paper presented to the Conference on Strategies for Educational Change, Washington, D.C., November 1965. Summarized in *SEC Newsletter of the Conference on Strategies for Educational Change*, 1965, 1(4), 4.

PURPOSE

This paper is intended to identify the most effective general strategy for inquiries in the area of educational change, and to illustrate how it might be employed. It argues that controlled experimentation is not necessarily the best strategy for studying this particular area.

METHOD

Based on an analysis of two general strategies available to investigators who seek to inquire into a given set of phenomena, the author constructs a conceptual paradigm for the change process, by which he justifies the use of one particular strategy in investigating educational change. He then outlines tactics which might be used in pursuing this strategy.

FINDINGS AND CONCLUSIONS

1. *The Two Possible Strategies for Inquiry Into Educational Change May Be Labeled "Experimental," and "Aexperimental" or "Field study."*

(*a*) In the experimental strategy the intent of the investigator is to inquire into possibilities, and in the process he utilizes controlled variables which he has selected on an a priori basis.

(*b*) In the field study strategy the investigator wishes to inquire into actualities, to ask, "What does happen in the real world?" He may be unsure of the variables that are relevant to his problem, and is not interested in studying them in any form except as they occur naturally.

2. *The Two Methods Do Not Produce Comparable Data.*—Each method complements the other. They differ in their setting, level of control scope, number of variables, treatment conditions, and context.

3. *The Process of Educational Change In-*

volves Four Stages: Research, Development, Diffusion, and Adoption.—Each has a particular objective. Whether or not these objectives are met is judged by the application of certain criteria which are different for each stage. Each stage bears a particular relation to the change process. These facts provide the framework for a formulation of the change process.

4. *The Field Study Approach Best Fits the Investigation of Educational Change Because:*

(*a*) In the experimental approach the investigator utilizes a few selected variables known to have high relevance. Change research is in its infancy. No generalized systems of variables or theories have emerged. The experimental method is of questionable utility in an area where the general level of sophistication is low.

(*b*) In the evaluation process the investigator focuses on actualities, on a natural setting, with a low level of control, and a great number of variables. This process fits exactly the conditions described for field study.

5. *Some Tactics Designed to Carry Out the Strategy Are the Following*:

(*a*) Field study must be conducted within an explicit theoretical or logical framework.

(*b*) Field study must be approached programmatically because of its complexity and morality; i.e., outline the possible objectives, assume a logical framework or theory, and make a conscious choice of the particular objectives to be followed on the basis of explicit criteria relating to the objectives.

(*c*) Data collection in field study is characterized by a unique relationship between the investigator and the field. Not dealing with controlled conditions, changes in the experimental conditions are expected. The field investigator attempts to capitalize on such changes; he need not fear that they will destroy the careful balance of experimental controls.

(*d*) Because of the probabilistic nature of field data, and the impressionistic way that these are gathered, constant replication and recycling are necessary to build confidence in conclusions.

(*e*) The fact that experimental control is not possible or even necessarily desirable in field study does not mean that the investigator is forced to use just any sample or situation. Purposeful selection is a powerful tool in focusing upon variables of interest to the investigator.

(*f*) Special techniques of analysis and interpretation need to be developed which are especially suited to the data produced by field studies. Many of these special techniques may be deduced by analogy to similar techniques in related areas.

(*g*) A most important tactic in planning field studies is to lean more heavily upon logical inference than upon statistical inference.

(*h*) The investigator should take as much advantage as possible of serendipities, or "natural breaks."

(*i*) Pathologies can be analyzed to gain insight into natural situations.

Comment by Reviewer

This paper presents a systematic analysis of one strategy for investigating educational change, and suggests particular tactics to be used in implementing this strategy, which the author labels "aexperimental" or "field study."

RESEARCH UTILIZATION

ANALYSIS AND SUGGESTIONS

Guba, Egon G. Development, diffusion and evaluation. In T. L. Eidell and J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968, pp. 37–63.

PURPOSE

There is a tremendous gap between knowledge production and knowledge utilization that cannot be spanned *either* by the producer or by the utilizer himself, or even by these two acting in concert, at least in the typical situation. New mechanisms and agencies using special techniques are required to perform this bridging gap or linking function. Guba details the phases of the research-utilization continuum, specifying the agency and mechanisms that might bridge the gap between knowledge production and knowledge utilization.

METHOD

The author has based his analysis on his own knowledge, experiences, and observations.

FINDINGS AND CONCLUSIONS

1. The theory-practice (research-utilization) continuum contains four phases or processes: Research, development, diffusion, and adoption.

(*a*) *Research.*—The objective of research activities is the advancement of knowledge. It involves depicting, relating, conceptualization, and testing.

(*b*) *Development.*—Development is directed toward identification of operating problems and the formulation of solutions to those problems. It involves depiction, invention, fabrication, and testing. Whereas the researcher tests in order to verify or refute his hypotheses under strictly controlled conditions, the developer is not concerned with controls, but the workings of an innovation in a real situation.

(*c*) *Diffusion.*—Diffusion activities are aimed at creating an awareness about new developments and providing opportunities for innovation assessment along whatever dimension practitioners may deem necessary. Diffusion activities center around procedures or methods of bringing a proposed problem solution or invention to the individual who may actually use it in practice. They involve telling, showing, helping, involving, training, and intervening.

(*d*) *Adoption.*—The basic objective of the adoption process is the adaptation of a development to the local situation and the installation thereof. The adoption phase involves a trial, installation (modification, training, equipping and housing, and organizing), and institutionalization.

2. *Development* is viewed as an activity with which neither the researcher nor the practitioner is capable of coping. In education, the invention function is better managed than the other functions, with fabrication and testing lagging far behind.

3. *Development agencies* are encouraged to assume the responsibility for all of the functions previously outlined.

4. In relation to diffusion, Guba advocates the use of diffusion strategies. Strategy is defined as "an action plan which indicates which adoption techniques should be used when and where and in what combination." The following elements should be considered during strategy development:

(*a*) *The assumptions concerning the nature of the practitioner who will be exposed to the strategy.*—He suggests several ways of of viewing the practitioner: as a rational entity, who can be convinced, as an untrained entity who does not know how to perform but who can be taught; as a psychological entity who can be persuaded; as an economic entity who can be compensated or deprived; as a political entity who can be influenced; as an entity in a bureaucratic system who can be compelled; or as a professionally oriented entity who can be obligated.

(*b*) *The assumptions concerning the end state in which one wishes to leave the practitioner.*

(*c*) *The assumptions about the nature of the agency or mechanism carrying out the diffusion strategy.*—Since the final implementation of the strategy depends upon the agent, the strategy must be one appropriate to the agent's circumstances.

(*d*) *The assumptions concerning the substance of the invention.*—How much change is required by the invention: Does it involve substitution, alteration, perturbations and variations, restructuring, or value orientation change?

4. According to Guba the purpose of evaluation should be changed from judgment to decisionmaking aid. This "new kind" of evaluation is termed emergent evaluation. Borrowing from Stufflebeam he outlines four kinds of evaluation activities: Context evaluation, input evaluation, process evaluation, and product evaluation. He argues for a more flexible, less controlled, more realistic cope scope and more continuity in evaluation.

Comment by Reviewer

Guba's differentiation of the practitioner entities may be useful in delineating various approaches to securing research utilization in different practitioner audiences.

KNOWLEDGE UTILIZATION SUGGESTIONS

Guetzkow, Harold. Conversion barriers in using the social sciences. *Administrative Science Quarterly*, June 1959, 4, 68–81.

PURPOSE

The author poses some answers to the question, "What is involved in converting basic social science knowledge into a form suitable for application in practical affairs?"

METHOD

The ideas in this article are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. The basic products of social science are tested theories. The process of utilizing these theories is very different from the task of generating them. General knowledge must be converted to a form useful for making predictions in concrete situations.

2. The conversion of general knowledge into a usable form can be viewed as consisting of a threefold process: (1) Reidentifying and measuring usable variables in concrete settings; (2) selecting variables from alternative theories and composing these variables into a relevant model; and (3) determining the magnitude of important constants in the selected system, so that specific predictions may be made for each different situation.

(*a*) *Re-identification and measurement of variables.*—It is difficult to transfer laboratory methodology to the field situation. In most cases simplification of measuring devices is a prerequisite for successful application.

(*b*) *Model selection.*—There are three basic difficulties likely to be encountered in choosing appropriate theories for problem solution.

(1) Social science is still in its early stages. Its theories are often inadequate for application to a particular situation; therefore alternatives may yield but a half-fit, which makes choice among them difficult.

(2) There is inadequate dissemination of basic knowledge among practitioners and lay users. Often the applier merely asks for "more knowledge" instead of inquiring how a particular independent variable or two will exercise their effects upon a given, well-defined dependent variable.

(3) The user of social science must immediately work with an interrelated system, rather than being able to quasi-isolate specfic aspects of a situation. Most research is done in parts and not related to the other parts of the problem.

Social science generalizations must be constructed with feedback systems incorporated as integral parts of the model being used.

(*c*) *Parametric determinations.*—Specification of initial conditions enables one to telescope the past and to provide data essential in making predictions about the future. It is also necessary to ascertain the weightings of the variables in an ongoing situation to make successful applications of knowledge.

3. *Shared Responsibilities.*

(*a*) The social scientist is responsible for: (1) The conceptualization of the variables and the indication of routes for their operational measurement, and (2) the specification of the way in which variables are related to one another.

(*b*) The practitioner must ascertain for different concrete situations the magnitude of the parameters, at the specific time when the application is being made.

4. *Middlemen.*—Using Schramm's model of utilization,

Scientist **Middleman** **Practitioner** **Ultimate User**
Technician

Guetzkow focuses on the possible functions of a middleman, who could transform basic knowledge from the various social sciences into usable forms. The author calls these middlemen social engineers. Their role would include:

(*a*) The development of practical alternative measures, once a variable has been conceptualized and operationalized.

(*b*) The selection of appropriate theory from the alternatives. (This function would require an individual who was broadly trained and given adequate time for continuous updating of his knowledge across the disciplines.)

(*c*) The repeated analysis of initial conditions and factor weightings each time the concrete situation changes.

5. Failures in the workability of social science knowledge may be traced to inadequate assessment of initial conditions and incorrect estimates of the weightings attached to particular factors in a given situation.

6. Problem situations often demand systems which cross the traditional academic disciplines. There are distinct differences in the intellectual tasks confronting the social scientist and the user of social science knowledge. Experts needed for using knowledge are different from those needed for its discovery.

Comment by Reviewer

The conversion process outlined in the article may be input for the construction of some guidelines for a practitioner who wants to translate research into a usable form.

CHANGE ANALYSIS

Hage, J., and Aiken, M. *Social change in complex organizations.* New York: Random House, 1970, chapter II.

PURPOSE

This study focuses on three questions: What organizational characteristics affect the rate of organizational change? What environmental factors account for variations in the rate of organizational change? What is the process of adopting new programs or other changes in organizations? (The chapter herewith summarized addresses itself to the first of these questions.)

METHOD

This is an analytical study, with limited use of case studies, findings, and conclusions. Seven hypotheses are advanced related to the rate of program change in an organization: (1) The greater the complexity (in terms of level of knowledge and expertise), the greater the rate of program change; (2) the higher the centralization (with regard to power and decisionmaking), the lower the rate of program change; (3) the greater the formalization (degree of codification, number of rules), the lower the rate of program change; (4) the greater the stratification (that is, differential distribution of rewards), the lower the rate of program change; (5) the higher the volume of production, the lower the rate of program change; (6) the greater the emphasis on efficiency, the lower the rate of program change; (7) the higher the job satisfaction (that is, the higher the morale), the greater the rate of program change.

Comment by Reviewer

In this study the authors elaborate on points made in an earlier publication (1968), also summarized in this report. The balance of the book is not included here because: (*a*) The discussion of organizational style (ch. 3) is only tangentially relevant, and (*b*) the analysis of the change process (ch. 4) duplicates already summarized results from other studies.

PROMOTING UTILIZATION
ANALYSIS AND SUGGESTIONS

Halpert, Harold P. Communications as a basic tool in promoting utilization of research findings. *Community Mental Health Journal*, 1966, 2(3), 231–236.

PURPOSE

The author's purpose in this paper is to identify the barriers to the effective communication of research findings, and to suggest ways of overcoming these barriers so that the research will be utilized.

METHOD

Dr. Harold Halpert is Chief, Systems Research Section, Mental Health Services Development Branch, Naional Institute of Mental Health. The paper is based on his general experience; no specific experiments, case studies, or surveys are cited.

FINDINGS AND CONCLUSIONS

1. Merely imparting or transmitting the results of research is usually insufficient to achieve utilization. If an objective for the communication of research results is to get people who plan and conduct service programs to put into practice those principles and methods which incorporate the new knowledge, then the people with whom we wish to communicate need to be specified.

2. When the potential "consumers" of a given piece of research have been identified, one strategy to insure greater utilization is to review and analyze completed research in terms of its applicability to service programs. Another strategy is for a funding agency to analyze consumer needs before research is undertaken, and attempt to interest researchers in filling those needs.

3. The barriers to communication identified by the author and his related recommendations are as follows:

- (*a*) Innovators frequently do not write up their findings, either because they simply do not care to do so or because financing is not available to cover the costs of writing.
  - (1) Publication and writeup charges should be accepted as an integral part of R. & D. costs.
- (*b*) Potential utilizers face data retrieval problems: they are flooded with information which is not adequately indexed and whose practical implications are obscure. And—doers often are not readers.
  - (1) Efforts should be made to prepare abstracts and review papers aimed at particular audiences and focused on particular problems such as aging, delinquency, and alcoholism, with guidelines for application of new techniques. In this way, new information is sifted, summarized, and presented

in a manner that maximizes its utility and attractiveness.

  (2) Interdisciplinary conferences should be held, dealing with specific themes. Adequate and readable reports of such conferences should be prepared and disseminated.

  (3) Financing should be made available for visits by operating personnel (potential users) to similar programs that have made innovations. Such visits should emphasize critical evaluation of the innovations as well as provide opportunity to get acquainted with the principal experimenters in the new types of programs.

  (4) In-shop consultants should be employed to provide regular advice on innovations and their application, and to serve as intermediaries between researchers and practitioners.

(*c*) Practitioners frequently perceive the researcher as being so divorced from practice that his research findings are unlikely to have practical value especially for program implementation.

  (1) Communications barriers resulting from overspecialization of roles can be reduced by giving practitioners research training, and by giving researchers experience in research utilization.

  (2) High-status practitioners should be made the main targets for the initial communication of innovation, in the hope they will serve as models to their colleagues. In general, it is helpful to develop people who can serve as links between researchers and practitioners.

(*d*) Practitioners are frequently wedded to old techniques that proved valuable in the past—and are reluctant to change.

  (1) New techniques should be presented as contributing more effectively to the achievement of established organizational goals, and as being improvements and refinements of older techniques, rather than as being totally unrelated to the organization's past experience. Research utilization is facilitated if practitioners can become directly involved in trying out new procedures.

  (2) Communication regarding a new procedure or innovation should be repeated many times.

Comment by Reviewer

This paper, based upon the author's experience and knowledge, summarizes many of the problems involved in research utilization, and also summarizes a number of possible remedies. While not "a new and original contribution to knowledge," it constitutes a very useful synthesis.

BARRIERS TO CHANGE

ANALYSIS

Halpin, Andrew W. Problems in the use of communications media in the dissemination and implementation of educational research. In K. Goldhammer and S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962, pp. 171–200.

PURPOSE

The position of this author is that "We suffer less from a dearth of findings than from a lack of sufficient guts to act upon those findings we do possess." There is a schism between knowledge and action. Halpin outlines some of the problems he sees in getting information and change to the educational practitioner.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. The difficulty in promoting change comes from: (*a*) The fact that the objectives of education are unclear and that their avowed purposes, even to such extent that they are clear, fail to receive unequivocal support from our society; and (*b*) public education is virtually a monopoly in most American communities.

2. The "need affiliation" of most teachers and school administrators acts as a barrier to change Need affiliation produces a desire for sameness or equality among the practitioners. They are unwilling to be different for fear it will affect their status within their peer group.

3. Halpin offers some objections to the idea of the educational change agent. He contends that the notion of the change agent is based on the fallacy that research needs to be translated into another language. Perhaps the scientists are at fault for abusive use of jargon. He points out the practical problem of obtaining individuals who can serve competently in this position, particularly since most institutions will not pay a top-level salary or offer a top-level position to an educational change agent.

Comment by Reviewer

As the title indicates, this article concentrates primarily on problems and offers little in the way of solutions or helpful hints.

The author's notions on the reason underlying expressed needs for a change agent role are certainly open to question. It may be true that competent change agents would be hard to find; that does not mean they are not needed.

MIDDLEMAN ROLES

SURVEY

Havelock, Ronald G. Dissemination and translation roles. In T. L. Eidell and J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968, pp. 64–119.

PURPOSE

The purpose of this paper is to analyze the roles, institutional arrangements, and problems involved in the process of linking research knowledge to potential users—of bridging the "knowledge gap" between research and practice.

METHOD

The author has drawn on his own knowledge and on the available literature on research dissemination to prepare this comprehensive overview and guide to effective use of linking roles.

FINDINGS AND CONCLUSIONS

1. A great variety of roles are linking roles in one way or another. The linker may play several linking roles in sequence, and sometimes he will not perform a linking role at all. Eight major types can be identified: Conveyor, consultant, leader, innovator, defender, knowledge-builder, practitioner, and user.

2. All the important functions which are needed to establish and maintain linkage between knowledge sources and resources on the one hand, and users, consumers, and clients on the other, should be seen as forming an interlocking chain.

3. The resource system includes the scholar, the basic researcher, the expert, the producer and packager, and applied R & D. The consultant and conveyor link this system to the client system, which includes the defender, the innovator, the leader, and the user.

(*a*) The primary institutional form in which the resource system is realized is the university. There are two legitimate ways for academic faculty members to dispense knowledge: Through the courses taught in the academic curriculum, and through publications and papers addressed primarily to colleagues.

(*b*) Linkers have five primary types of institutional base: University, government, commercial, practice, and independent. (An example of the latter is the informal role of opinion leader.)

4. In the client system there are two principal institutional patterns:

(*a*) *The profession*—a high-status group of independent operators bound together in a reference group with tough membership prerequisities (e.g., law, medicine). Professionals in private practice are not linked to the resource system to any extent. They are dispersed throughout the community, having a great variety of contacts, but they are not primarily oriented to sharing knowledge with colleagues or to building knowledge as such. They are primarily oriented to providing service.

(*b*) *Bureaucracies*—characterized by division of labor, leadership, and interdependence. These three attributes should, in theory, facilitate linkage. If leadership is effective, and communication lines open and efficient, the specialized nature of bureaucratic roles make them promising targets for the linker.

5. There are major limitations on independent linkers: They cannot serve on a full-time basis; their efforts are likely to be sporadic and their influence haphazard; they cannot be relied upon to provide training, special skills, and equipment and supplies which may be necessary accompaniments to innovation.

6. Linking institutions can be divided into permanent and temporary organizational units.

(*a*) Permanent units include centers, institutions, laboratories, companies, and associations.

(*b*) Temporary units include projects, programs, committees, courses, conferences, and conventions.

7. Permanent linking institutions provide three important possibilities for linkers: Security, identity, and coordination. Possible disadvantages are isolation, self-satisfaction, and rigidity. It is largely through a suborganization into temporary systems that linking institutions avoid these pitfalls.

8. The linker's activities can be grouped into three kinds of processes: Getting information (input), processing information (throughput), and distributing information (output). There is the danger of overload at each stage.

9. "*Marginality*" *can be a problem*—the linker takes from the research world but he is not clearly a part of that world, and he gives to the practice world while not being clearly a part of that world either.

10. There are four things that have to be done to build a functioning system of knowledge linkers—

(*a*) build an institution which includes and supports the required roles (installation);

(*b*) recruit candidates to serve in these roles (recruitment);

(*c*) train recruits to fill the roles (training); and

(*d*) supply the equipment necessary to do a good job (equipping).

Comment by Reviewer

This paper provides an in-depth look at the roles, institutions, and problems involved in linking research to practice. It is detailed, and includes a comprehensive bibliography of available literature on research utilization.

DISSEMINATION/UTILIZATION
THEORETICAL ANALYSIS

Havelock, Ronald G. *Planning for innovation through dissemination and utilization of knowledge.* Ann Arbor, Mich.: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1969. (Final report, contract No. OEC-3-7-070028-2143, Office of Education, Department of Health, Education, and Welfare.)

PURPOSE

To assess the current state of knowledge with respect to process of dissemination and utilization (D & U) and to derive implications for the guidance of researchers, practitioners, and policymakers.

METHOD

The essential formula which guides the analysis in this study is: *Who* says *what* to *whom* by *what channel* to *what effect* and for *what purpose?* This encompasses the research (resource system), the practitioner (user system), the "message" (data, theory, method, services, and product), the media, and some evaluation of the extent and impact of utilization.

The study was carried out by an extensive literature review (approximately 4,000 items) and the formulation of models for categorization and integration of such literature.

FINDINGS AND CONCLUSIONS

1. Within the individual, factors relating to D & U can be classified as enduring characteristics (competence, authoritarianism, open/closed-mindedness, values, needs, past experience) and those less enduring and accordingly more subject to change (sense of threat, tendency of individuals to compare selves with others, fear, self-fulfilling prophecies concerning expectations, ability to process information, motivation, and capacity for attitude change). When threat, fear, and potentially conflicting values are aroused—that is, are relevant to the situation—resistance is enhanced. Lack of arousal may lead to a more rational evaluation of the alternative actions presented by the new knowledge.

2. Within the organizational context:

(*a*) The factors that *inhibit input* of new knowledge are: Need for stability, the organization's shared way of ordering things, internal social cohesion, fear of malevolence of outsiders, fear of personal threat to particular insiders, local pride, organizational status, overall economic conditions of the organization, training and socialization process for new members (that is, training which stresses not rocking the boat), size of organization as a whole (generally speaking, larger organizations are more innovative).

(*b*) The factors which *facilitate input* are: The reward value of the new knowledge itself, a change in organizational leadership, perception of crisis, specialized "input" training, the importation of new staff members who already have new ideas, the installation of specialized knowledge-seeking and innovating subunits (such as R & D laboratories).

(*c*) Factors *inhibiting output:* Need for stability, inertia, complacency, perceived vulnerability, inadequate or overlimited organization goal definition, perceived lack of readiness of client, professed danger to client.

(*d*) Factors *facilitating output:* Free and open competition, crisis, affluence, internal openness, organizational values which support quality output, and specialized output roles and subsystems.

(*e*) Factors which *inhibit throughput* (that is, flow of knowledge within organization, both vertically and horizontally): Division of labor and subgrouping of membership, specification and separation of specialized task roles, formation of an organizational hierarchy, innovation-suppressive reward patterns and training, traditional bureaucratic patterns of leadership.

(*f*) Suggested *strategies* for *facilitating throughput* of new knowledge: Develop a newer style of leadership which includes a mix of technical, organization, and human relations skills, conduct organization development training programs, develop shared perceptions and superordinate goals with which all subunits can identify, increase genuine participation and influence-sharing up and down the hierarchy, build overlapping subunits with multiple-shared memberships, provide for periodic job rotation, create specialists in the linking process, restructure to optimize the knowledge flow function.

3. The following typology of knowledge-linking roles is formulated:

(*a*) *Conveyor:* transfers knowledge from producers (scientists, experts, scholars, developers, researchers, and manufacturers) to users (clients and consumers).

(*b*) *Consultant:* assists users in identification of problems and resources, provides linkage to appropriate resources, assists in adaptation to use, serves as facilitator, objective observer, process analyzer.

(*c*) *Trainer:* instills in the user an understanding of an entire area of knowledge or practice.

(*d*) *Leader:* effects linkage through power or influence in one's own group.

(*e*) *Innovator:* (this includes not only the actual originator but also the first person in a social system to take up new ideas) initiates diffusion in the user system.

(*f*) *Defender:* sensitizes the user to the pitfalls of innovation, mobilizes public opinion, public sensitivity, and public demand for adequate applications of scientific knowledge. (NOTE.—While most linkers are assumed to be facilitators, the defenders supply warranted inhibitions.)

(*g*) *Knowledge builders as linkers:* (includes basic scientist, scholar, applied researcher, R & D manager, and engineer) serves as gatekeeper for the knowledge storehouse, defines goals of knowledge storehouse, defines goals of knowledge utilization, maintains dual orientation of scientific soundness and usefulness.

(*h*) *Practitioner as linker:* makes available to clients and those practices and services which incorporate the latest scientific knowledge.

(*i*) *User as linker:* takes initiative on own behalf to seek out scientific knowledge and derive useful learnings therefrom.

(NOTE.—This study, at various points, established two classes of users of new knowledge—the practitioner and the consumer—that is, the mental health practitioner and the patient or the educator and the pupil.)

4. The relative utility of categories of media are suggested:

(*a*) One-way transmission media serve to inform mass audiences and to catalyze further information-seeking within the user system. (For innovation-prone users, one-way media may be sufficient for evaluation, trial, and adoption.)

(*b*) One-way feedback on the impact of the transmitted information should be a very valuable input to researchers and disseminators but is very seldom elicited by most resource systems.

(*c*) Two-way transmission is imperative for the adoption of innovation requiring alterations in attitude or behavior because it is conducive to increased involvement on the part of the user and exposes him to the pressures of group commitment.

5. Three D. & U. models are identified:

(*a*) *The research, development, and diffusion model (RD & D)*—
  (1) Assumes that there is a relatively passive target audience of consumers which will accept the innovation if it is delivered through the right media, in the right way, at the right time.
  (2) Calls for a rational sequence of activities from research to development to packaging before dissemination takes place.
  (3) Assumes large-scale planning.
  (4) Requires a division of labor and a separation of roles and functions.
  (5) Is subjected to continuing scientific evaluation.
  (6) Bears a high-initial development cost and anticipates a high payoff in

terms of quality, quantity, long-term benefit, and capacity to reach mass audience.

(*b*) *Social interaction model (S-I)*—
  1. (1) Is sensitive to the social relations network—to the fact that a complex and intricate set of human substructures and processes must be operative before diffusion will succeed.
  2. (2) Has a sophisticated awareness of the variety of positions a user can hold in the network (opinion leader, innovator, laggard, early majority, etc.).
  3. (3) Stresses the importance of face-to-face contact.
  4. (4) Recognizes that people tend to adopt and maintain attitudes and behaviors which they perceive as normative for their psychological reference group.
  5. (5) Assumes that the size of the adopting unit is essentially irrelevant (that is, findings from one setting can be applied to the analysis of another setting, regardless of size and other differentiating characteristics).
  6. (6) Adheres to the following phase model of the adoption process: Awareness, interest, evaluation, trial, adoption—with appropriate influencing strategies used at each stage.

(*c*) *Problem-solving model (P–S)*—
  1. (1) The user's needs are the starting point for the research, rather than the destination.
  2. (2) Diagnosis is a precursor to the quest for solutions—that is, you not only identify the problem but pinpoint its underlying cause.
  3. (3) The outside helper is essentially nondirective; the user is guided as he does his own problem solving.
  4. (4) Stresses utilization of internal resources (home-grown and home-stored knowledge).
  5. (5) Assumes that self-initiated change has the firmest motivation basis and the best prospects for long-term maintenance.

(*d*) The investigators stress the advisability of unifying and integrating the foregoing three models through proper linkers.

(*e*) Certain specific functions of government with respect to knowledge utilization are suggested: Monitor the total system, facilitate linkage where barriers exist, add components where there are significant gaps, discourage the growth of divisive and maladaptive subsystems.

6. The investigators cite seven factors which account for most D & U phenomena, as follows:

(*a*) *Linkage.*—There must be reciprocal and collaborative relationships between resource system and user system. Within the user system, innovators must be linked to opinion leaders who in turn must be linked to followers. The content of the innovation must be linked to the user—that is, it must be relevant. Media should be compatible to both sender and receiver in terms of experience and style.

(*b*) *Structure.*—Resource system must have meaningful division of labor and coordination of effort, must have coherent view of client system, and must plan its D. & U. activities in structured sequence. User system must be organized to receive input, must have adequate internalized problem-solving strategy. The new knowledge must be coherent in form and substance, and be coherently transmitted.

(*c*) *Openness.*—The resource system must have a willingness to help and a willingness to listen and to be influenced by user needs and aspirations. The user system must actively reach out for new ideas, new products, new ways of doing things; it must be willing to take risks and adapt innovations to its special situation. New knowledge must be open and accessible to inspection and evaluation by user. Diffusion strategies must be flexible.

(*d*) *Capacity.*—For both resource and user systems, capacity is measured in terms of wealth, power, status, education, intelligence, and sophistication, which have been demonstrated to be good predictors of successful innovations and utilization. For the user, it also means self-confidence plus the resources to call upon outside help.

(*e*) *Reward.*—The resource system receives positive reinforcement through profits if it has a commercial orientation; if its orientation is basic research, the rewards come from recognition by colleagues, satisfaction from creating something that works, feedback from satisfied clients. The user system is rewarded if the benefits derived from the innovation warrant the investment of time, money, and effort.

(*f*) *Proximity.*—The chance of an innovation's being accepted and effectively utilized is positively related to its nearness in time, place, and context, its familiarity and its recency. Proximity can be psychological as well as physical. Proximity facilitates linkage.

(*g*) *Synergy.*—Several inputs of knowledge, working together over time, produce knowledge utilization. This final factor, then means programed and purposeful redundancy: a variety of messages must be generated pertaining to the same piece of information and these messages must be directed at the potential user on a number of different channels in a number of different formats, all coordinated to the one goal of adoption of innovation.

7. Seven phases are enumerated for the change agent in moving a client from the present state of affairs to the desired future state of affairs. They are: Building a relationship, diagnosing the problem, retrieving relevant knowledge, selecting the innovation, developing supportive attitudes and behaviors, maintaining impetus for change, stabilizing the innovation.

Comment by Reviewer

This report is one of the landmark studies in the field of innovation—scholarly, sophisticated, comprehensive. The literature search has been extremely impressive and the formulation of dissemination/utilization models particularly penetrating.

RESEARCH UTILIZATION
ANALYTICAL DISCUSSION

Havelock, Ronald G. Translating theory into practice. *Rehabilitation Record*, November–December 1969, 24–27.

PURPOSE

To formulate suggestions which will help close the gap between research and practice.

METHOD

The paper is based on the author's experiences in the field of research utilization.

FINDINGS AND CONCLUSIONS

1. For the most part, research knowledge is used primarily by researchers, rather than by practitioners.

2. Better techniques of dissemination will not, of themselves, close the gap between researcher and practitioner; what is needed is a total system approach to knowledge flow.

3. Though much headway has been made in the area of storage and retrieval of scientific information, at this point these advances are more useful to the researcher than to the practitioner.

4. The author focuses on two categories of social innovation which he perceives as useful bridges between research and practice: Temporary systems and change agents.

5. With respect to temporary systems, he stresses the need for such events to be structured not only so that there is some contact and face-to-face interaction but also so that the issues which divide and the bonds which unite these two worlds can be thoroughly explored.

6. The following features of a successful temporary system are enumerated.

(*a*) There must be joint goal setting by practitioner and researcher.

(*b*) The task must be approached diagnostically; start with an identified problem that needs solution rather than a solution in search of a problem.

(*c*) Retrieval of resources should encompass not only research evidence but also practices, methods, models, and specific individuals who could be used as consultants.

(*d*) There should be continuous analysis and feedback on the human relations of the collaborative process as they emerge.

(*e*) There should be documentation and evaluation of what takes place during the meetings of the temporary system, as well as subsequent followup to assess effectiveness.

7. The following points are made with respect to the change agent:

(*a*) We are moving away from the notion of the agent as the conveyor of new facts, innovations, and research (as in the agricultural county agent) toward a concept of the agent as consultant, facilitator, and catalyst.

(*b*) The change agent is often charged with setting up collaborative temporary systems and with building more permanent connections between researchers and practitioners.

(*c*) There is still lack of understanding of the role of the change agent. This needs further defining, and appropriate training to equip persons to fulfill the role.

(*d*) Central to the function of the change agent is his capacity to identify informed persons. He needs to know who the experts are, how to approach them, how to use them effectively. (NOTE.—The Michigan-Ohio Regional Educational Library has a storage and retrieval system which contains the names of people who would be useful consultants on a particular topic or in the planning of a particular type of project in the field of education. The author suggests that there be more of these "human resources banks.")

(*e*) Handbooks and reference manuals with respect to the change process would aid the change agent in capitalizing on the successful experiences of others tackling comparable problems.

Comment by Reviewer

This is a capsule presentation of some of the concepts more fully developed by the author in his final report of the CRUSK study, *Planning for innovation through dissemination and utilization of knowledge* (see *Annotated Bibliography, Vol. II*).

INNOVATION
ANALYSIS

Havelock, Ronald G., et al. *A guide to innovation in education.* Ann Arbor, Mich.: Center for Research on the Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1970.

PURPOSE

This manual is directed to the change agents of education, identified by the author as "the many educators who are working for reform at all levels, helping school systems, schools, and individual teachers learn about new developments in administration, classroom management, curriculum, and teaching methods." The manual is presented as an easy reference in the planning and day-to-day management of change.

METHOD

The analytical method is augmented by case material and citations from the literature related to change.

FINDINGS AND CONCLUSIONS

1. Building a relationship between the change agent and the people to be served involves the following considerations:

(*a*) Relating to the client system: What are its norms, who are its leaders, who provides informal leadership, who are the gatekeepers, and with what elements within the client system does the change agent feel he can most effectively work?

(*b*) Relating to the larger social environment: What are its norms, what is the quality of community leadership, who are the influential persons in the community, to what extent should the change agent devote his effort to these outside forces?

(*c*) The relative advantages of the inside versus the outside change agent must be weighed.

  (1) The insider has the advantage of knowing the system, speaking the client's language, understanding the norms, identifying with the system's needs and aspirations, and being a familiar figure; he has the potential disadvantages of lacking perspective, lacking special knowledge or skill, not having an adequate power base, having a record of past failure, lacking independence of movement, and facing the need to redefine relationships with other members of the system.

  (2) The outside change agent has the advantages of starting fresh, having perspective, being independent, being in position to introduce something genuinely new; his potential disadvantages are that he is a stranger, he lacks "inside" knowledge, and he may not have the close identification with the problem which the insider has.

(*d*) The ideal relationship between change agent and client should encompass reciprocity, openness, realistic expectations, a well-defined structure (roles, procedures, etc.), shared power, minimum threat.

(*e*) The change agent should be alerted to the following danger signals which might threaten the relationship and imperil the likelihood of bringing about change: A long history of unresponsiveness to change; the client's attempt to use the change agent as pawn; the client's preexisting commitment to a position; powerlessness of the client; fundamental incapacity of the client.

2. Once the relationship has been established, the first task of the change agent is to guide the client in making a diagnosis.

(*a*) If the approach is identification of problem, both surface symptoms and underlying causes must be studied and interpreted.

(*b*) If the approach is identification of opportunities, emphasis is on client's strengths as well as weaknesses.

(*c*) A third approach is to arrive at the diagnosis through an understanding of the client system: its interrelationships and interdependencies how the subgroups work together toward common goals.

(*d*) The following checklist is offered as an aid in making a systemic diagnostic inventory:

  (1) What are the system's goals?
  (2) Is there an adequate structure for achieving these goals?
  (3) Is there openness in communications?
  (4) Does the system have the capacities necessary to achieve its goals?
  (5) Does the system reward its members for working toward its goals?

(*e*) Some possible pitfalls in the process of making a diagnosis are suggested: Wasting too much time and energy on diagnosis; using the diagnostic phase as a way of stalling; using diagnosis for destructive confrontation; imposing your own favorite diagnosis; firefighting (responding to client pressure for crash programs).

3. The change agent must know when, where, and how to acquire resources (printed material, people, products) to share with his client.

(*a*) Resource acquisition serves a variety of purposes: Diagnosis, awareness of what is new and/or available, evaluation before trial, trial, evaluation after trial, installation, maintenance.

(*b*) The resources for diagnostic information can be tapped through such strategies as: Using the problem vocalizer as informant; using key informants within the system; group interviewing; observation; observing and measuring system outputs; organizing a self-diagnostic workshop for the client system; using an outside diagnostic research team; collaborative systematic diagnostic program; continuous quantitative diagnostic monitoring.

(*c*) Awareness of "resource universe" can be built and maintained through: Mass media, personal acquaintance network, familiarity with information systems (libraries, clearinghouses, data banks, etc.).

(*d*) A strategy for applying resources to the solution of a diagnosed problem includes: Acquiring an overview from a comprehensive written source; obtaining an overview from a knowledgeable person; observing the innovation in "live" form; obtaining evaluative data; obtaining the innovation on trial; acquiring a framework for evaluating the results of the trial.

(*e*) The change agent should so indoctrinate the client that know-how concerning resources acquisition becomes a permanent capacity.

4. Once the client knows what his needs are and is familiar with the resources upon which he can draw, how does he choose the solution which is right for him? The change agent can guide him through a four-step process.

(*a*) Deriving implications from research by: Retrieving summary statements; reformulating and checking for understanding; establishing relevance to client's setting; staging implications for action.

(*b*) Generating a range of solutions through brainstorming.

(*c*) Feasibility testing in terms of potential benefit, workability, and diffusibility.

(*d*) Adaptation to the realities of the client's setting.

5. In gaining acceptance for the innovation, the change agent is alerted to a number of levels of acceptance and strategies for reaching these targets.

(*a*) As the individual goes through the phases of adoption (awareness, interest, evaluation, trial, adoption, integration) the change agent provides support with a series of matching phases: promoting awareness by providing exposure to the innovation; supporting interest by stimulating search for information; aiding evaluation by providing demonstration of innovation; bolstering trial by providing training; helping the individual adjust to the adoption phase; and nurturing the integration of new skills to assist the integration.

(*b*) The adoption by the community calls for identification by the change agent of the community's innovators, resisters, and leaders; he diagnoses the forces for and against the innovation and uses the community's key people (pro and con) as stepping stones in gaining group acceptance.

(*c*) Effective communication is a core activity in gaining acceptance; the change agent utilizes a range of media to reach the right people at the right time.

(*d*) The program must remain flexible so that acceptance will be lasting; this may call for revisions of the innovation or revision of the implementation strategy.

6. To stabilize the innovation, the change agent must be aware of several long-term as well as immediate goals.

(*a*) To insure continuance of the innovation, there must be continuing reward, practice to assure mastery of the new skills and procedures involved, structural integration of the innovation into the client's system, continuing evaluation, providing for continuing maintenance of the innovation, and a continuing capacity for adaptation.

(*b*) The client should learn to be a change agent for himself; that is, he should be aided in creating a capacity for self-renewal.

(*c*) In an adroit and sensitive manner, the change agent must schedule and carry out his ultimate disengagement from the client after a successful innovation project.

Comment by Reviewer

A lively, creative, and useful handbook. It includes a number of checklists, exercises in self-evaluation, and case material and is presented informally and accessibly.

The version which has been herewith summarized is identified by the author as an interim version.

RESEARCH UTILIZATION

SURVEY

Havelock, Ronald G. New developments in translating theory and research into practice. Paper presented at the 96th annual meeting of the American Public Health Association, Detroit, Mich., November 1968.

PURPOSE

This article reviews the current use of a total systems approach to knowledge flow, isolates some essential features of this approach, and attempts to point out its peculiar advantages as a process of bringing the gap between research and practice.

METHOD

The author utilizes the current literature concerning the utilization of research results in this survey of the feasibility of a total systems approach.

FINDINGS AND CONCLUSIONS

1. The total systems approach promotes effective and meaningful applications of scientific knowledge by creating a social system which will link research to practice in an *interdependent* relationship.

2. Present information systems are primarily supplements to the scientist's own information gathering processes, having little relevance or value to the practitioner.

3. An important premise is that a social system has to exist before a technical system can be introduced.

4. Two broad categories of social innovation on which some development has been taking place are "temporary systems for collaboration" and "specialized knowledge-linking change-agent roles."

5. Essential features of the temporary systems for collaboration are these:

(*a*) There needs to be joint goal setting by practitioner and research representatives.
(*b*) There needs to be serious work done on the diagnostic level.
(*c*) There needs to be systematic retrieval of resources relevant to the diagnosis.
(*d*) There needs to be continuous analysis and feedback on the human relations of the collaborative processes as they emerge.
(*e*) There needs to be self-conscious documentation and evaluation of the meetings, to maintain the structural integrity of the system and to provide feedback to the researchers and practitioners who participated.

6. One of the major tasks of the change agent is to plan and initiate collaborative temporary systems, and to build from these the more permanent connections between researchers and practitioners which are necessary to make a field function as a total system.

7. There is a need for handbooks and reference manuals which are specifically addressed to the change process itself, to aid change agents in the field.

8. There is a great need for systematic experimentation and development to improve the linkage of research and practice.

Comment by Reviewer

This article brings into focus current experiments on the linking of research to practice, and presents evidence regarding the value of a total systems approach to this problem. References to relevant literature are included.

RESEARCH UTILIZATION
LABORATORY STUDY

Havelock, R. G., and Mann, F. C. *Research and development laboratory management knowledge utilization study.* Ann Arbor, Mich.: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1968. (Final report on contract No. AF49(638)1732.)

PURPOSE

The objective of this project was to develop and study more effective processes for utilizing social science research knowledge in the management of research and demonstration laboratories. Findings obtained from previous work has been met with polite indifference, misgivings about their relevance, and sharply expressed doubt about their usefulness in the everyday management of laboratories.

METHOD

1. *Sample.*

The "subjects" used in this project were the directors of research and development laboratories. The directors were all from laboratories with staffs of more than 30 professionals in the Detroit-Ann Arbor area of Michigan. The 50 laboratories that met this criterion were contacted with a brochure and letter, followed by a brief telephone interview, and where feasible by a site visit for an extended interview. Thirty laboratories were visited and interviewed. Of the 18 laboratory directors expressing a positive attitude toward the idea, eight attended the regularly scheduled meetings that were the essence of the project design.

The author cite three primary reasons for participation: (*a*) Some directors saw an opportunity to *share* and *compare*; (*b*) some directors welcomed the opportunity to *advise* and *criticize* the social science findings; they viewed the project rather as an academic exercise; (*c*) some directors exhibited a strong urge to *learn.*

2. *Treatment.*

For the eight participating directors, 12 by-weekly, 4-hour sessions were held. Four different types of knowledge inputs were used: Empirical social science research findings regarding laboratory management, human relations skills and concepts, learning from colleagues, and survey data from the manager's own laboratories.

A staff of five conducted the "seminar." There was a senior director who chaired each meeting and served as a special adviser to individual laboratory directors when consultation seemed called for, a junior director who coordinated the staff's efforts and directed the research evaluation activities, a group process specialist, an organizational survey specialist, and a graduate assistant who served as a knowledge retrieval specialist and summarizer.

3. *Methods and Measures of Evaluation.*—Attempts were made to record, measure, and evaluate not only what was going on at each meeting, but also what was happening between meetings and after the conclusion of the seminar. Information for evaluation was obtained from three sources:

(*a*) *Self-report measures:*

Each director completed a postmeeting reaction questionnaire following each session. They rated and commented on the meeting as a whole and each clearly distinguishable segment of it.

Checklists on problems and applications, and on use of specific Pelz-Andrews implications,* were used repeatedly to ascertain areas where research findings were used.

Each director participated in a 2-hour interview in which he focused on what he had actually done with seminar learnings.

(*b*) *Observations of seminar behavior:*

All sessions were taped and later analyzed in detail and coded according to a continuum of movement toward utilization. The continuum covered three basic areas: (1) Awareness and understanding;

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*This was the knowledge input for the seminar. Pelz-Andrews (1966), Scientists in Organizations, Wiley (their citation method).

(2) acceptance; and (3) adoption utilization.

(*c*) *Survey of laboratory staffs:*

Six of the laboratory staffs were surveyed. The information gathered from these surveys was primarily for the use of the directors in the seminar. However, the questionnaire did include a series of questions asking the respondents to indicate whether or not they had observed each of the management practices dealt with in the seminar in operation at any time in the past 6 months.

This information was later juxtaposed with the reports of the director.

FINDINGS AND CONCLUSIONS

1. From the self-reports of the directors, the authors found a general overall satisfaction with the seminars, with most of the participants expressing a desire to continue this type of activity. Utilization of inputs was definitely apparent. In the postseminar interviews, all the lab directors were able to describe changes in attitude and practice that indicated utilization of knowledge inputs.

2. From the analysis of the tapes made during the seminar meetings, the authors found that over time the comments of the participants moved from those indicating awareness and understanding to comments indicating behavioral acceptance. The tapes indicated that utilization does not take place easily or immediately. The continuing nature of the seminar was considered instrumental in moving participants from cognition to utilization.

3. The laboratory surveys indicated that specific utilizations reported by the directors were generally confirmed by their staffs. Supervisory professionals in most labs reported a noticeable change in the working environment.

The majority of changes introduced by laboratory directors derived directly from behavioral science data followed by extended discussion and explorations of meanings and implications for action.

4. The followup measures indicated that the participating directors were concerned with the diffusion of learnings to their staffs. Several of the directors set up regular seminars with their staffs, modeled in one or more respects after the project seminar.

5. The authors felt the findings indicated that a multiple-input, open-ended approach such as the one utilized in this study could lead to a high level of utilization. Social science findings do have relevance and meaningful action implications, but a linking function is necessary to insure actual use.

Comment by Reviewer

This study points out the importance of providing an atmosphere or situation in which new ideas can be discussed and talked about. It is not enough to make individuals aware of what is known. Doubts need to be expressed and shared with others before understanding and initial acceptance is complete.

The ability, desire, and willingness to utilize research findings can probably be brought about only with some help from individuals who serve as "linkers" between the researcher and the practitioner. The sessions described in this study gave the participants the opportunity to explore new ideas, as well as support for implementation.

COMMUNICATION RESEARCH
THEORETICAL ANALYSIS

Hovland, C. I., Janis, I. L., and Kelley, H. H. *Communication and persuasion.* New Haven, Conn.: Yale University Press, 1953.

PURPOSE

To study the ways in which words and symbols influence people, to identify and understand major communication variables, and to provide an initial framework for subsequent theory building.

METHOD

A program of systematic research on variables determining the effects of persuasive communication was begun by the writers several years ago, designated the Yale communication research program. The present volume is a report of that research, summarizing experiments which have been completed, and discussing the theoretical formulations developed. It is in a sense a progress report on the preliminary phases of a long-term research program to investigate the principles involved in persuasive communication.

Three central characteristics of the communication research program are: (1) It is primarily concerned with theoretical issues and basic research; (2) it draws upon theoretical developments from diverse sources, both within psychology and related fields (sociology, political science, anthropology) including "learning theory" and "group membership" concepts; (3) it emphasizes testing propositions by controlled experiment.

The authors provide several working definitions as a general contextual framework within which the research is conducted:

> *Opinion.*—Interpretations, expectations, and evaluations such as belief about intentions of others, anticipations concerning future events, and appraisals of the rewarding or punishing consequences of alternate courses of action. In these studies, opinions are viewed as verbal "answers" that an individual gives in response to stimulus situations in which some general "questions" are raised.
>
> *Attitude.*—Those implicit responses which are oriented toward approaching or avoiding a given object, person, group, or symbol.
>
> *Communication.*—The process by which an individual (the communicator) transmits stimuli (usually verbal) to modify the behavior of other individuals (the audience).

The above definition specifies the research task as consisting of the analysis of four factors: (1) The *communicator* who transmits the communication; (2) the *stimuli* transmitted by the communicator; (3) the *audience* responding to the communication; (4) the *responses* made by the audience to the communication.

FINDINGS AND CONCLUSIONS

1. *The Communicator.*—Several studies analyzed the effects upon opinion of varying the expertness and trustworthiness of the communicator. The results indicated:

- (*a*) Communications attributed to low-credibility sources tended to be considered more biased and unfair in presentation than identical ones attributed to high-credibility sources.
- (*b*) High-credibility sources had a substantially greater immediate effect on the audiences' opinions than low-credibility sources.
- (*c*) The effects on opinion were not the result of differences in the amount of attention or comprehension, since information tests reveal equally good learning of what was said regardless of the credibility of the communicator; variations in the source credibility seem to influence primarily the audiences' motivation to accept the conclusions advocated.
- (d) The positive effect of the high-credibility sources and the negative effect of the low-credibility sources tended to disappear after a period of several weeks.

2. *The Communication.*—The major portion of the studies reported focus on content stimuli which arouse emotional states or which are capable of providing strong incentives for acceptance of the new opinion and/or rejection of the original opinions held by the audience. Findings reveal:

- (*a*) The major classes of appeals or arguments which function as incentives are identified as:—
  - (1) substantiating arguments which may lead audience to judge the conclusion offered as "true" or "correct";
  - (2) "positive" appeals which call attention to the rewards to be gained from acceptance;
  - (3) "negative" appeals, including fear-arousing contents, which depict the unpleasant consequences of failure to accept the conclusion offered.
- (*b*) *Fear appeals.*—Findings suggest that the use of fear appeals will interfere with the overall effectiveness of a persuasive communication if such appeals evoke a high degree of emotional tension without adequately providing for reassurance.
- (*c*) *Salience of group norm.*—Communica-

tions which call attention to group membership may prompt the individual to take account of group norms in forming his opinion on a given issue.

(*d*) *Conclusion drawing.*—In communications which deal with complicated issues it is generally more effective to state the conclusion explicitly than to rely upon the audience to draw its own conclusion.

(*e*) *Preparation for future experiences.*—Findings are consistent with the hypothesis that once a belief is modified by an effective communication there will be a tendency for the newly acquired opinions to interfere with the subsequent acquisition of any incompatible opinion.

3. *The Audience.*—It is generally recognized that people will react differently to the same social pressures: incentives can function adequately only insofar as the individual has the necessary motivational predispositions. These central factors are:

(*a*) *Group conformity motives.*—Persons most highly motivated to maintain their membership in a group tend to be most susceptible to influence by other members within the group, and will be most resistant to communications contrary to the standards of that group.

(*b*) *Individual differences in persuasibility.*—

(1) Persons with high intelligence will tend to be more influential than those with low-intellectual ability when exposed to persuasive communications which rely primarily on impressive logical arguments.

(2) Persons with high intelligence will tend to be less influenced than those with low intelligence when exposed to persuasive communications which rely primarily on unsupported generalities or false, illogical, irrelevant argumentation.

(3) Persons with low self-esteem are predisposed to be highly influenced by persuasive communication.

4. *Response Factors.*—All the studies reported have been concerned with the effects of communications, but in several investigations the special aspects of active participation and duration of changes have been analyzed:

(*a*) *Active participation*—

(1) When exposure to the same persuasive communication is held constant, individuals who are required to verbalize the communication aloud to others will tend to be more influenced than those who are passively exposed.

(2) Under certain conditions role playing and other means of producing verbal conformity may interfere with acceptance.

(3) Systematic exploration is needed to discover the conditions under which active participation has negative or boomerang effects.

(*b*) *Duration of effects*—

(1) A study reveals that if the audience is reminded of the source of a communication, there is relatively little change over time in retention.

(2) But normally there seems to be a tendency to dissociate the content from the source and consequently the positive (or negative) influence of the source declines with time.

5. *Emerging Areas of Research Which Requires Study Before Further Progress Can Be Made:*

(*a*) *Internalization processes* (the transformation of outer conformity into inner conformity).—While extensive work has been done on the processes of internalization in clinical studies, there is great need for further systematic analysis of the implications of internalization processes as they occur in communication situations and face-to-face communication.

(1) *Conflict and opinion change.*—In order to understand the outcomes of many attempts at opinion change, various kinds of conflict situations must be thoroughly explored (a single communication may arouse two competing sets of motives within the individual; initial reaction to source

and to the content may be incompatible; communicator may be highly respected but his proposals may be quite objectionable.

(2) *Perceptions, judgments, and concept formation.*—Problems of "frame of reference" and "reference groups" point to the necessity of more extensive study of judgmental phenomena.

(*b*) *Problems in theoretical analysis of persuasion.*—There is necessity of isolating the critical factors involved in communication effects. Little research has been systematically directed toward disentangling attention, comprehension, and acceptance; thus an important problem for future investigation is the analysis of those factors which differentially effect attention, comprehension, and acceptance in complex communications situations.

Comment by Reviewer

This is an interesting, scholarly report. Topics covered are those for which results are available from studies done in their research program. Topics not treated in the research program, but which are sometimes included in the descriptive formula, are those pertaining to the nature of the *medium* and the *situation* in which the communication is given. It is also to be noted that all of the studies are concerned with the problems encountered when an audience is available to a communicator and do not deal with the *prior problem of securing or enlarging the audience.*

INTRODUCING INNOVATIONS

SUGGESTIONS

Howard, Eugene. How to be serious about innovating. *Nation's Schools*, April 1967, 79, 89–90, and 130.

PURPOSE

The author outlines six operating principles for introducing innovations in educational systems.

METHOD

The author draws on his own experiences and his observations of innovation introduction in other school systems.

FINDINGS AND CONCLUSIONS

1. Put the philosophy of the organization to work. Write it down. It is effective when: (*a*) Stated in terms specific enough to guide the operational decisions the staff and administration must make, (*b*) used consistently by the designated leaders in the organization as a guide to administrative decisionmaking, (*c*) decisions are evaluated on the extent to which they are consistent with the stated philosophy.

2. Build the program from the bottom up. Periodic studies should be made. These can disclose the discrepancies between the stated philosophy and current practices. Provide support for those who view their jobs creatively and are receptive to new ways. Programs build on the commitments. Involvement in the development of innovative practices will lead to a greater probability of success.

3. Encourage an experimental attitude. Supplant inefficient, capricious trial-and-error methods with systematic evaluation efforts. The organizational climate must support mistake making. Innovators need help in asking questions about what they are doing in such a way that the questions get answered. They also need help in finding appropriate information, in interpreting this information in the light of predicted outcomes of the new practices, and in basing future actions on interpretations of the information that has been generated.

4. Pace the rate of change carefully. Watch for overextension, as well as too laggardly a pace.

5. Make organizational structure support its program. Organize structures such as schedules, statements of procedures, budgets, etc., to sup-

port innovative activities undertaken by individuals.

6. Don't confuse flexibility with sloppiness. A flexible organization is an organization in which individuals are free enough to make important decisions affecting the quality of their work and mature enough to assume the responsibility for these decisions.

Comment by Reviewer

This "how to" article while aimed at schools and innovation introduction can be translated to provide some suggestions for supporting research utilization in a mental health organization. The suggestions are of a commonsense variety and not derived empirical investigation.

RESEARCH UTILIZATION
CONCEPTUAL MODEL

Jain, N. C., and Amend, E. A conceptual framework for studying communication patterns in research dissemination and utilization. Paper prepared for the 17th annual NSSC Conference, Cleveland, Ohio, April 1969.

PURPOSE

In this paper, the authors develop a conceptual model which can be utilized for analyzing, both theoretically and empirically, the communication processes and patterns that are involved in the dissemination and utilization of research results.

METHOD

The authors begin their paper by demonstrating the need for a framework for analysis, noting the lack of studies dealing directly with the problems of research utilization. After defining their objectives and assumptions, the authors focus on the functions and the nature of the information handling process in each of the three types of social systems involved in the research dissemination and utilization process: (*a*) The *research system*, producing and developing research findings; (*b*) the *linking system*, disseminating and facilitating the utilization of research findings by (*c*) the *client system*. Finally, they present their model, and outline some possible uses of the analytic framework.

FINDINGS AND CONCLUSIONS

1. The functions of the three social systems involved in the process of research dissemination and utilization are: (*a*) Research and development, which includes activities dealing with the production of research information that could be utilized for solving practical problems. (*b*) Dissemination or the activities that facilitate the flow of research-based information to, and its utilization by, the clients. (*c*) Utilization is the application of research-based information to problem-solving behavior.

2. In order to perform these functions, the research system, the linking system, and the client system all handle information. There are three main processes involved in information handling: (*a*) Information inputting, (*b*) information processing, and (*c*) information outputting. These are conceptually distinct but interrelated processes. Communication patterns vary with each of the three aspects of information handling.

3. The nature of the involved social systems and the aspects of the information handling processes are used to label the two dimensions of a 3 by 3 matrix having nine cells. The matrix of categories of communication patterns in research utilization can be pictured as follows:

Nature of Social System	Nature of information handling behavior		
	Information input	Information processing	Information output
Research system	1	2	3
Linking system	4	5	6
Client system	7	8	9

4. The possible uses of the framework suggested by the authors include: (*a*) The generation of meaningful research questions; (*b*) a tool for examining the interdependence of the com-

munication behaviors of all three systems; (*c*) a guide for a literature search; (*d*) a systematic way to identify major gaps and research needs in the area of the communication processes related to research utilization; and (*e*) a guide to the formulation of generalizations and hypotheses for empirical research.

Comment by Reviewer

The assumption of a linking system in the research utilization process may be a bit premature, as it is the absence of such a role in most instances that produces the hiatus between research and practice.

CHANGE PROCESS ANALYSIS

Jenkins, David H. Force field analysis applied to a school situation. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 238–244.

PURPOSE

The author outlines the basic steps in social engineering and applies them to a specific situation using force field analysis.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

The basic steps of social engineering outlined are: (1) Analyze the present situation; (2) determine the changes which are required; (3) make the change indicated by the analysis of the situation; and (4) stabilize the new situation so that it will be maintained.

1. *Analyzing the Present Situation.*—Before effective plans for change can be made, the present state of affairs must be defined as accurately as possible. What are the forces which are keeping our methods in their present groove? What are the forces driving for change? What are the forces restraining change?

2. *Planning for Change.*—Changes will occur only as the forces are modified. The task is either to strengthen the driving forces or decrease the restraining forces.

(*a*) *Ways forces can be changed.*—Component forces can be modified in the following ways: (1) Reducing or removing forces; (2) strengthening or adding forces; and (3) changing the direction of the forces.

(*b*) *Selection of the forces to be modified.*—The first step may be to determine what forces, if any, must be dealt with before a change can occur. Are there some forces whose direction can be reversed? Which opposing forces can be reduced with the least effort? Which augmenting or upward forces can be increased?

3. *Modifying the Forces.*—Based on the foregoing analysis the indicated modification procedures should be initiated.

4. *Stabilizing the New Condition.*—Whenever change is planned one must make sure that the new condition will be stable. Continued support for the new change is important, otherwise the resistant forces may push back toward the former condition.

Comment by Reviewer

The steps outlined in this article can provide a framework for making the changes necessary to insure research utilization as a common practice among mental health workers.

EDUCATIONAL DIFFUSION
CASE STUDY

Johansen, L. N. *Report of Title III program.* Schulte Elementary School, Sturtevant, Wis.

PURPOSE

This project is aimed at the reeducation of teachers for new roles and tasks involved in new organizational patterns.

METHOD

Includes the operation of a summer laboratory which in the last three summers involved some 340 teachers on an intensive, full-time, 8-week basis. There is also an ongoing diffusion and propagation process during the school year.

FINDINGS AND CONCLUSIONS

The most pertinent findings to date concern the time involved in seeing payoff from such a program.

"Our experiences to date would indicate that any program of diffusion and propagation must involve a rather long period of time in order to see the spinoff results. We attempted to make some evaluations of our project at the end of 6 months and 1 year and in each case the depth of involvement had not penetrated to the point of producing results one would like to find. However, after 2 and 3 years, we have found many, many examples of the propagation process which works through initial motivation and further interest and visitation, and finally to efforts of implementation either in the school or school systems. In nearly every case, we found that when people are first exposed to innovations they assimilate the ideas and demand further discussion and consideration on their own local levels. If the original catalyst is strong enough they will move to the second phase, which is to visit and learn more about specific things which were identified as innovations. And then they will finally go into their local settings and start turning the wheels necessary to initiate change."

Comment by Reviewer

This experience suggests the need for long-term followup in change programs.

RESEARCH NEEDS
COMMISSION STUDY

Joint Commission on Mental Illness and Health. Research resources in mental health. In *Action for mental health.* New York: Basic Books, 1961, pp. 193–224.

PURPOSE

This chapter is a component of the comprehensive report of the Joint Commission whose overall purpose was to develop recommendations for a national mental health program.

METHOD

The chapter is based primarily on a monograph by Dr. William F. Soskin, prepared specifically for the Joint Commission. His findings are augmented by suggestions made by the members of the commission staff and by the committee on the studies.

FINDINGS AND CONCLUSIONS

1. Two important and pervasive aspects of the overall research effort in mental health are identified:

(*a*) *Diversity*—work on many levels from many different approaches and by investigators from a variety of specialties is actively underway.

(*b*) *Recurrent* (and perhaps overemphasized) differentiation between basic and applied research.

2. Research activity in mental health has been highly concentrated in a relatively small number

of major universities. It is pointed out that the typical viewpoint of the university community is different from the approach of those who are directly concerned with delivering services to patients; hence the research practitioner gap is, to a certain extent, foreordained.

3. The major share of systematic investigation on mental health problems is conducted by psychologists. This reflects the heavy stress placed on research competence in graduate training in psychology. The field of psychiatry, which in the minds of legislators and of the public is strongly identified with mental health, is relatively inactive in research. Social scientists have (as of the date of the report) had relatively little support for mental health research.

4. Significant areas of mental health research are identified. These include:

(*a*) *Basic research*—structure and function of the brain, relationship of brain activity to psychological process, biochemistry of mental illness, implications of new findings in genetics in relationship to mental illness, psychological research related to cognitive and perceptual process and to language and communication, studies of sensory deprivation, longitudinal studies of normal personality development, studies of group process and interpersonal relations, social epidemiology of mental disorders, family role in mental illness.

(*b*) *Applied research*—primary prevention (mental health education; role of schools; effects of major societal adjustments such as introduction of automation, desegregation, emergence of urban problems); care and treatment (evaluation of new drugs; development of alternatives to hospitalization for chronic patients); administrative patterns.

5. As of the date of the report, more than half of the total outlay for mental health research came from the Federal Government, mainly from NIMH. The following "implicit policy" with respect to granting of research funds was formulated:

(*a*) Research policy is predominantly influenced by people trained in research rather than by practitioners responsible for treatment institutions.

(*b*) Prime criterion for awarding a grant is the scientific competence of the investigator rather than his official position or prestige.

(*c*) Research funds are to be used for the production of knowledge only and are not to be diverted to meet other needs. The implications of this are:

  (1) There is undue emphasis on the single project rather than on total research needs.

  (2) Administrating institution has limited and only nominal control over funds.

  (3) Funds are allocated on a directly competitive basis with minimal consideration of regional distribution or spread through various disciplines.

(*d*) The development of multiple sources of support for research is encouraged.

6. The following problems and issues of the current research enterprise are explored:

(*a*) The concentration of mental health research in a small number of major universities has the following implications:

  (1) It accentuates the focus on specific projects rather than broad research needs.

  (2) It dislocates much of the normal scholarly activities of the university, forces universities to become inordinately dependent on grant funds, impels investigators to devote much of their time to the pursuit of grants, etc.

  (3) It generates a maldistribution in the allocation of research support, with virtually none of it going to Southern States or to local and regional colleges.

  (4) The intellection tradition of the university is reflected in the focus of mental health research; by the same token, many practical problems are neglected.

(*b*) The split between researchers and practitioners is a reflection of their differing biases, goals, work styles. The practitioner has a sense of urgency with respect to the needs of his patients; this is at variance with the long-term, slow-moving orientation of the researcher. Even when researcher and practitioner work together on the same problem, little mutual understanding is achieved.

(*c*) The public conception of mental health research tends to focus on crash programs which will produce dramatic breakthroughs (in the manner of the Salk vaccine for polio). There is inadequate public understanding of (and hence political support for) the necessity for the long view in planning and supporting research.

(*d*) Mental health research is currently overdependent on the Federal Government. What is needed (at the time of writing) is not only more research money, but, perhaps more important, more funds to train research scientists. If Federal agencies undertake to fund such training programs, this would constitute even further usurpation by the Government of the role of the university.

7. The following strategies are proposed for expanding and strengthening the research effort on mental health problems:

(*a*) There should be support for flexible and experimental programs of stimulating research in many different areas and settings.

(*b*) Efforts should be made to increase contacts between researchers and practitioners so as to increase mutual understanding of each other's problems and approaches.

(*c*) There is a general need for long-term research support.

(*d*) There is an urgent need to expand and intensify basic research in mental health.

Comment by Reviewer

This is a basic document in the field of mental health policy, and accordingly of great relevance to researchers/consultants/practitioners. Some of the specifics of this chapter may be out of date but the total orientation is entirely timely.

RESEARCH UTILIZATION GAP
ANALYSIS AND SUGGESTIONS

Joly, Jean-Marie. Research and innovation: Two solitudes? *Canadian Education and Research Digest*, 1967, 2, 184–194.

PURPOSE

The author's purpose is twofold. First, he attempts to answer the question: Is there, or is there not a considerable delay in the application of educational research to educational practices? Second, he offers a series of suggestions for bridging the gap between research and practice, and gives principles concerning the nature of education that must be kept in mind when one tries to bridge a gap.

METHOD

The ideas in this article are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. Although there may be differences of opinion about the extent of the gap between the results of educational research and educational practices, the author feels that a significant estrangement exists. He attributes the difference of opinion to different definition of terms, observation of different samples, and the difficulty of establishing with certainty what actions, what policies, and what innovations are direct applications to specific research findings.

2. Why the estrangement? What are the basic factors that have led educational research and educational practice into "two different solitudes?" To some extent the estrangement may be unavoidable, and may even be desirable for the following reasons:

(*a*) Too few excellent persons are engaged in research careers, too much reliance has been placed on individual efforts, and too little has been done to set up interdisciplinary teams to deal with the complex issues in education.

(*b*) Little or no attention has been given to the necessity of repeating experiments in order to demonstrate the reliability or unreliability of the results published by the original investigator.

(*c*) Education is responsive to moral and political pressures as well as scientific ones.

(*d*) It is difficult to establish and maintain a fruitful dialogue between researcher and practitioner. The competent research person has by necessity acquired a high level of specialization, with the attendant recondite concepts and esoteric vocabulary. The educator is not particularly well prepared to listen to him.

3. A dialogue between researcher and teacher or administrator thus brings together most, if not all, of the conditions that will guarantee complete absence of communication: Divergent interests, mutual mistrust, use of different language.

4. There are several ways of bridging the gap between researcher and practitioner.

(*a*) *Action research.*—A group of teachers tackle a problem in the hope of devising an effective solution; a research specialist serves as a consultant or team member. This strategy implies the realization of three objectives: Usable results of fundamental research will be incorporated in the behavior patterns of teachers; solutions adapted to local conditions will be devised; and personal and professional growth will take place in the team members.

(*b*) *Establish a linking organization.*—An organization such as the educational laboratories could be created where public school teachers and administrators, university professors and administrators, representatives of State departments, teachers' associations, business, and industry are brought together.

(*c*) *Establish an educational program based on involvement.*—An organization similar to the Ontario Institute for Studies in Education which undertakes the threefold task of graduate instruction in education and allied sciences, research, and development. Both the staff and students are expected to participate in all three types of work.

5. *Principles To Keep in Mind*:

(*a*) Fundamental research, development, and dissemination are three distinct jobs. When successfully conducted, research produces understanding, development results in proven, practical procedures, and products and dissemination lead to adoption of the products and procedures.

(*b*) All three jobs are essential to the progress of education as a social endeavor. Without basic research, our schools would fall victim to high-pressure salesmanship, faddism, and quackery. Without development, research in education would become at best an elegant form of mental gymnastics and at worst an expensive parlor game. Without dissemination, research and development are pointless.

(*c*) All three jobs are essential to education as a profession. It is through their knowledge of basic research results that teachers can operate more successfully as professionals.

(*d*) Entrusting all three tasks, or even two of them, to the same persons is not necessarily an ideal solution. Since so few competent research persons are at present available it might not be wise to burden them with development of dissemination duties.

6. The author concludes with a warning against the adoption of innovation without properly researched study of the effects of the innovation.

Comment by Reviewer

Although written with education as the focus, many of the statements seem applicable to the field of mental health.

Judson, Arnold S. *A manager's guide to making changes.* New York: Wiley & Sons, 1966.

PURPOSE

The book presents a series of strategies for implementing change in a business organization. It is essentially a how-to-do-it presentation.

METHOD

The method is analytical, backstopped by generous citation of case material.

FINDINGS AND CONCLUSIONS

1. Before introducing and attempting to implement change, the manager should clarify the following:

(*a*) What is to be accomplished and why?
(*b*) What will be the value of the change?
(*c*) What methods will be used to accomplish the objectives?

2. Typically, change affects people in three ways:

(*a*) The behavioral effects represent the alterations they must make in their work habits.
(*b*) The psychological effects represent changes in the ways in which they relate to and regard their work.
(*c*) The social effects represent the changes in established relationships with coworkers and with the organization.

3. The individual's attitude toward a change is affected by the following factors:

(*a*) His predisposed feelings about changes of any kind.
(*b*) The extent of his feelings of insecurity.
(*c*) Any prevailing cultural beliefs and norms that might be in conflict with the change.
(*d*) The extent of his trust in his management, his union and his work group.
(*e*) Objective historical events relevant to the change.
(*f*) His specific apprehensions and expectations about the particular change.
(*g*) The manner in which the change is introduced and implemented.

4. The response to proposed change can range from active, outright resistance, through more subtle, passive forms including indifference, to acceptance.

5. In attempting to assess the extent of organizational resistance to change, management should, in effect, construct a balance sheet in which potential losses (as perceived by those affected) are weighed against potential gains.

6. Among the strategies for minimizing resistance are: Compulsion, persuasion, dispelling fear, developing a full understanding of the change, appropriate timing in scheduling the change, involvement of those affected in planning and implementing change, avoiding implications of criticism, and flexibility in installing change.

7. The role which an individual occupies within an organization affects the way in which he perceives a proposed change, as follows:

(*a*) The originator of the change will be the most optimistic, the least patient, and the least objective.
(*b*) The manager will be the most objective; he also will be the person whose course of action determines the success or failure of the change.
(*c*) The supervisor will be more oriented to the difficulties attendant upon the change than to its potential benefits.
(*d*) If there is a staff specialist involved, he will tend to share the positive bias of the originator. He is likely to be insensitive to the psychological and social effects of the change.

8. A systematic approach to making change calls for the following steps: Analyzing and planning the change, communicating about the change, gaining acceptance of the required changes in behavior, making the initial transition, consolidation, and followup.

9. In order that change be managed effectively, the following attributes of organizational climate are required:

(*a*) Change is considered a continuing, normal activity.
(*b*) Line managers and supervisors are responsible for introducing and implementing change.
(*c*) Senior management does a minimum of interfering, giving maximum freedom of action to those to whom the responsibility for change has been assigned.
(*d*) Among managers and supervisors, task accomplishment takes precedence over immediate personal and political objectives.

Comment by Reviewer

Although this book has as its intended audience the business community, the points it makes are equally applicable to other organizations.

COMMUNICATION

SURVEY

Julian, Joseph. Compliance patterns and communication blocks in complex organizations. *American Sociological Review*, 1966, 31, 382–389.

PURPOSE

Compliance involves the relationship between the different means of influencing behavior and the kind and amount of effect generated by these means. This article examines the extent to which different compliance patterns are related to the degree of communication obstacles between hospital patients and staff.

METHOD

Hypothesis Being Tested

The author expected general hospitals to have predominately normative power structures and patients who demonstrated a positive attitude toward the hospital, whereas hospitals with a more custodial orientation would be characterized by a more coercive power structure and patients who had a relatively unfavorable attachment to the hospital.

Hypothesis

As the compliance relations of the hospitals move along the continuum from normative to coercive, the degree of communication blockage increases.

Sample

A total of 183 patients in five hospitals (a university hospital, a medium-sized general voluntary hospital, a large general voluntary hospital, a tuberculosis sanitorium, and a veterans hospital within the metropolitan area of a large Midwestern city) were interviewed. These patients represented an availability and density sample in the selected hospital units who were willing and intellectually able to participate. In general, the patients in the five hospitals were similar in age, sex, marital status, number of children, range and distribution of occupation.

Data Collected

Data were obtained on: (1) Patients' perception of the frequency with which different types of sanctions were utilized;* (2) the extent to which patients were negatively involved, neutrally involved, and positively involved in the organization; and (3) patients' reports of obstacles to the contact and transmission of messages between patients and staff. The principle instrument was a flexible, combination interviewer-respondent administered questionnaire.

FINDINGS AND CONCLUSIONS

1. The data revealed the utilization of normative power in all five of the hospitals, with coercive sanctions less frequently reported in the university and general hospitals than in the TB sanitorium and veterans hospital.† Over 70 percent of the patients had a positive orientation to

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*Normative sanctions involve persuasion, manipulation, or suggestions based on the allocation and manipulation of social symbols, rewards, and deprivations; coercive sanctions refer to the application of physical force and controlling through force.

†This meant the hospitals were classified as either normative or normative coercive.

the normative sanctions employed. The data indicated that normative hospitals had fewer communication blocks than normative-coercive hospitals.

2. The author suggested that normative-coercive organizations had more communication blocks because their goals were oriented more toward control and/or coordination than toward patient involvement. He further generalized that blocks in downward communication occur more often in organizations with relatively higher degrees of both coercion and structure.

3. Julian concludes that restriction of information and communication is related to the effectiveness of organizations that utilize coercive sanctions and generally exercise relatively high degrees of control to obtain their objectives. Conversely, free flow of communication is related to the effectiveness of organizations that utilize normative sanctions and exercise relatively low degrees of control.

Comment by Reviewer

This study hints at the generalization that coercive efforts usually bring about less acceptance and communication, and therefore less involvement. In the change situation, coercion is less effective than other persuasive techniques.

EDUCATIONAL INNOVATION
MODEL BUILDING

Jung, C., and Lippitt, R. The study of change as a concept in research utilization. *Theory into Practice*, 1966, 2(1), 25–29.

PURPOSE

The purpose of this article is to answer the question: How can scientific knowledge be used to contribute to an orderly and creative process of planned change in education? Starting with the assumption that research findings seldom provide direct answers about what the educator should do in dealing with a problem, the authors seek to show how educators can derive implications from research findings that might help meet specific classroom situations.

METHOD

The key question, as stated above, was broken down into its major elements—education, scientific knowledge, planned change, and utilization. Each of these was defined. A summary definition of each is as follows:

(1) *Education.*—Stimulating motivation and maintaining good learning experiences for children, in the context of the total school system, not just the classroom. Three kinds of awareness and knowledge are necessary, in order to help improve educational activities: (*a*) Diagnosis of the priority needs for change; (*b*) awareness of existing innovations as alternatives for action toward change; (*c*) knowledge of the resources available to work toward change.

(2) *Scientific knowledge.*—This includes theory, research findings, and research methodologies.

(3) *Planned change.*—The inclusion of certain basic problem-solving phases in adapting to an action concern. These include: (*a*) Identification and diagnosis of the concern; (*b*) the retrieval of relevant knowledge and derivation of implications from that knowledge; (*c*) formulation of action alternatives; (*d*) feasibility testing of selected action alternatives, including training and evaluation; (*e*) and adoption and diffusion of successful alternatives.

(4) *Utilization.*—Both a process and a structure. The process: A flow of information from basic research, to development of applications, to action, to dissemination by the practitioner, to use by the consumer. The structure: The organization of the roles of researcher, developer, practitioner, consumer, and linker.

The above definitions were combined into a model for educational change that represents the process of utilization. The core of the process is the problem-solving phases of planned change.

FINDINGS AND CONCLUSIONS

1. The model of research utilization for educational change demands collecting data about the educational setting. The methodologies of science can be borrowed by the practitioner and adapted as aids to gain this knowledge.

2. General research findings help teachers consider what kinds of things may be helpful to know about in their classrooms; the use of diagnostic tools helps them to determine more clearly what is happening in their own classroom groups.

3. It seems feasible that principals and other administrators could find similar use for systematic diagnostic tools such as questionnaires and modified research instruments to do a better job of securing accurate knowledge about their systems.

4. In addition to its potential diagnostic value, scientific methodology may be useful in providing the educator with evaluative feedback.

5. The model of research utilization to facilitate educational change is a process requiring supportive collaboration among people.

6. When given clearly defined tasks, social scientists might be especially helpful in these instances: Contributing to the retrieval of appropriate theory and findings; reacting to the validity of derived implications; adapting methodology to creating diagnostic and evaluative tools; conducting values inquiry into the assumptions which underlie practices; creating training experiences for practitioners to develop skills required by innovations; and conducting new research on the process of research utilization itself.

7. The utilization of scientific knowledge for planned change in education calls for involvement of three roles—the roles of educators, of researchers, and of linkers between the first two.

8. Four major kinds of needs must be met in order to begin to make progress toward answers to such questions.

(*a*) There is a need for collaboration between researchers and educational practitioners.
(*b*) There is a need for the university setting and the school system each to explore the use of new functions to support the utilization process.
(*c*) There is a need to identify and develop training resources. A technology of training must be identified, developed, and made readily available.
(*d*) Research is needed on the process of utilization and on institutional structures which support it. Research is especially needed regarding retrieval of findings, derivation of implications, interpersonal skills for collaborating, skill-training technology, and action-research skills for field diagnosis and evaluation.

Comment by Reviewer

The model presented in this article helps to clarify the roles and processes involved in adapting research knowledge to educational innovation. The authors point out specific areas in which further research is needed.

KNOWLEDGE CLASSIFICATION
EXAMPLE AND SUGGESTIONS

Kadushin, Alfred. Assembling social work knowledge. In *Building social work knowledge: Report of a conference.* New York: National Association of Social Workers, 1964, pp. 16–37.

PURPOSE

Underlying any program of research utilization is the organization of knowledge and research findings. It is necessary to know what knowledge is possessed. It is necessary to collect and sort out the data, separate fact from fantasy, knowledge from guesswork, speculative inference, however logical, from valid conclusions.

In this article, the author advocates that a "serious" encyclopedic inventory of social work knowledge be made available for practitioners.

METHOD

Kadushin takes a specific subject area from the field of social work and shows how one might make a comprehensive survey of the literature to determine what is known about it and the differential levels of validity with reference to knowledge available. He begins by categorizing the knowledge available into three major divisions: (1) Social policy and administration, (2) growth and behavior, (3) social work methods, and then reviews available knowledge in each of these areas. He gives an actual example of the type of inventory he advocates.

FINDINGS AND CONCLUSIONS

The author's concluding paragraph neatly summarizes his plea.

> The point is that systematic reviews of the literature regarding specific services, specific concepts, specific skills, undertaken under the direction of some central group, proposing some flexible commonality in approach are feasible, are worth the effort involved, can give us what we need and do not now possess—a comprehensive, authoritative statement of our knowledge base, and an equally important perspective on our knowledge. Such material can act as a guide, a stimulus, a brake to our theoretical attempts at delineating theoretical structures . . . .

Comment by Reviewer

The systematic review of literature is one way of keeping the researcher and practitioner in touch. It does not, however, appear as though this would work unless some feedback system is built into the operation that will permit practitioners to report what types of information and findings they find valuable and workable in practice.

DISSEMINATION DEVELOPMENTS

ANALYSIS

Kaplan, Bert. Dissemination of primary research data in psychology. *American Psychologist*, 1958, 13(2), 53–55.

PURPOSE

To discuss the implications of the development of microreproduction techniques to the dissemination of primary research data in psychology.

METHOD

The ideas presented in this article are based on the author's own intellectual analysis.

FINDINGS AND CONCLUSIONS

1. With the advent of microreproduction techniques, and especially the development of the microcard, publication by psychologists is no longer dominated by the economic factors of high-cost letterpress publication and the resultant scarcity of journal space, high-rejection rate, abbreviation of articles, and book publication according to sales potential rather than scholarly value.

2. Among the many possible solutions which microcopy techniques hold for publication problems is the development of easy access to original research data which usually is stored so as to be virtually inaccessible.

3. Psychology has been very wasteful of its empirical materials:

(*a*) Data are often inadequately exploited. Researchers are often content to skim data for what is most easily available and discard the remains rather than squeezing out every last bit of meaning from their data.

(*b*) Data are not shared among researchers who share common interests. Rather, a highly individualistic pattern of data utilization has emerged in which data are regarded as private property and the pattern is set for one investigator or team to analyze each set of data which they discard when finished. But psychological data are often so complex that they defy the efforts of any one person to comprehend.

4. As a result of these wasteful practices, frequently one researcher has just the kind of material that someone else needs; sometimes hundreds of workers around the country are frustrated in their desire to work on particular problems because they lack funds and facilities to collect the necessary data, while at other, generally larger and richer, organizations these needed data may be lying around unused.

5. The author discusses the activities of the Committee on Primary Records in the Division of Anthropology and Psychology of the National Academy of Science's National Research Council established in 1955—

(*a*) the development of special categories of research data which could be most useful to others; and
(*b*) the determination of what the best organization of data publication channels might be.

6. To date they have found that: (*a*) Generally, workers in child development, social psychiatry, personality, clinical psychology, and testing are the most enthusiastic about the prospect of having raw materials accessible, while experimental psychologists see little value in it for themselves; and (*b*) there is wide agreement that data to be published should be chosen with great care and editorial wisdom.

7. Three distinct patterns for the publication of primary records may be identified:

(*a*) Researchers with data to disseminate contact a microtext publisher and make individual arrangements for publication.
(*b*) Individuals or groups initiate highly specialized series.
(*c*) Development of stable publication series under the sponsorship of professional societies.

8. One other possibility offered by microreproduction techniques is that of combining a letter-press journal of contemporary abstracts, somewhat more extended than offered by psychological abstracts, with a supplemental service providing, on order, extended versions of the papers on microcards.

9. These proposals may not make great headway until inexpensive microcard readers are developed and the new techniques have gained wider acceptance among psychologists.

10. In conclusion, the author states: "One thing is certain. The flow of information in psychology will increase many times in the next few decades, and radical new solutions will be required if the information psychologists generate is to be retained, organized, and utilized" (p. 55).

Comment by Reviewer

Improved dissemination of data among researchers should eventually result in greater utilization of research since: (1) The likelihood of information reaching practitioners would be increased, and (2) practitioners would also have access to the new channels of information.

CHARACTERISTICS OF INNOVATIONS

ANALYSIS

Katz, Elihu. The characteristics of innovations and the concept of compatibility. Paper presented at Rehovoth Conference of Comprehensive Planning of Agriculture in Developing Countries, Rehovoth, Israel, 1963.

PURPOSE

The characteristics of the "item" to be diffused affect its rate of adoption. There has been some difficulty in developing generalizations about the characteristics that are most influential in the adoption process. In this article, the author explores several different characteristics that seem to emerge from past research findings as influential effectors of adoption and utilization.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS

1. Most "items" can be classified as material (things) or nonmaterial (ideas). It is readily apparent that it is much easier to gain acceptance of things than ideas.

2. *Factors Effecting Adoption.*

(*a*) *Communicability.*—The more readily the utility of an "item" can be explained and demonstrated the greater the probability of adoption.

(*b*) *Pervasiveness.*—The more limited and more readily apparent are the ramifications of the item's adoption the greater the probability of adoption. In other words, the less pervasive the greater the probability of adoption.

Katz hypothesized that an innovation high in communicability and low in pervasiveness would be readily adopted by those well integrated in the social system by virtue of the greater influence of interpersonal communication with other members of the social system. On the other hand, an innovation high in pervasiveness would be more likely accepted by an individual less closely bound by the norms of the relevant social system.

(*c*) *Risk.*—Two factors reduce the amount of risk involved in innovation adoption. *Reversibility* or the more easily the status quo can be restored reduces risk. The more *divisible* (the ease with which an innovation can be adopted on the installment plan) the less risk and greater the probability of adoption.

(*d*) *Profitability.*—The greater the observable profit, the greater the probability of adoption.

3. *Compatibility.*

The aforementioned concepts are in turn related to their compatibility with the values of the potential adopters. The adopter must perceive the innovation as compatible with his values concerning risk and profitability before the innovation is adopted.

Any agent of change must understand how the potential adopters see the innovation. A primitive pretest in which potential adopters are interviewed in some depth concerning the proposed innovation and then observed while trying it out may be the best technique for determining the compatibility of a given innovation with the values of the adopters.

4. *The Item and the Unit of Adoption.*

In this section Katz considers the effect of whether an individual or collective decision is required for innovation adoption. While some social systems favor more individual action, others *prescribe* adoption behaviors. Other things being equal, an innovation is more likely to be accepted when it "requires" the kind of adopting units which are "favored" by the culture or social system.

Campaigns seeking acceptance for innovation are more likely to succeed if they are addressed to the appropriate units of adoption.

5. *The Item and the Social Structure.*

Innovations require a certain distributional structure. Some structures are more compatible than others for innovation dissemination. The structure of the system can either facilitate or hinder the flow of innovational information.

CONCLUSIONS

Social relations condition the acceptance of innovation by virtue of their function; (1) As anchorage points for shared values; (2) as units of adoption; (3) as networks of interpersonal communication; and (4) as allocators of differentials in social role, social control, and social support.

Comment by Reviewer

The characteristics outlined by Katz can be applied to research findings. His observations are based on research that has been completed on innovation adoption in both rural and medical systems.

INNOVATION DIFFUSION
CASE STUDY

Katz, Elihu. The social itinerary of technical change: Two studies on the diffusion of innovation. *Human Organization*, 1961, 20, 70–82.

PURPOSE

On the assumption that the itinerary of change has been ignored (note that the study was published in 1962), the author undertakes to trace the movement of a given new practice, over time, through specific channels of communication, within a social structure.

METHOD

A comparative analysis was made of two studies: One of how hybrid seed corn gained acceptance among farmers in two Iowa communities; the other of how physicians in four communities responded to the availability of a new "miracle" drug (gammanym). Both new products were highly recommended by competent scientific authority, both were of central importance to the groups for whom they were intended, both were capable of producing results which could be readily measured and seen, both could be adopted on the installment plan rather than on an all-or-nothing basis, and both had the potential of economic profitability to the adopter.

FINDINGS AND CONCLUSIONS

1. For both groups, the interpersonal network of communication played an important role in the diffusion process.
2. Those who were audacious in terms of being early adopters were conservative in terms of the degree of their first use of the innovation; late adopters could be bolder because they could depend on the accumulated experiences of the innovators.
3. Availability of information concerning an innovation does not assure its adoption.
4. Both farmers and physicians first heard about innovation through salesmen. For farmers, significant sources of information were neighbors; for physicians, professional journals, and colleagues. Commercial sources inform, informal sources legitimate.
5. For both groups, early adopters had more contact with the outside world. The farmers read more farm journals, made more trips to city, to county fairs; the physicians read more medical journals, attended more out-of-town medical meetings.
6. Early adopters among farmers belong to more formal organizations; among physicians, they were more integrated in informal friendship, discussion, and advice networks.
7. In both groups, the early adopters were less tradition bound, tended to be younger, more affluent.

Comment by Reviewer

A useful formulation which has been echoed and elaborated upon in subsequent literature.

ATTITUDINAL CHANGE
EXPERIMENTAL STUDY

Kelman, Herbert C. Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, 1958, 2, 51–60.

PURPOSE

The experimental study was concerned with some of the conditions that determine the nature of attitude changes produced by communications on social issues.

METHOD

The specific content of the attitudes investigated in this study was in the area of race relations. The underlying assumption was that there are differences in the process whereby the individual accepts influences or conforms. These different processes were identified as compliance (an individual accepts influence because he hopes to achieve a favorable reaction from another person or group), identification (an individual accepts influence because he wants to establish or maintain a satisfying self-defining relationship to another person or group), and internalization (an individual accepts influence because the content of the induced behavior is intrinsically rewarding).

The subjects in the experiment were Negro college freshmen; the experiment was conducted in the spring of 1954, just prior to the announcement of the Supreme Court decision on desegregation in the public schools. The subjects were exposed to the following tape-recorded communication: If the Supreme Court rules that segregation is unconstitutional, it would still be desirable to maintain some of the private Negro colleges as all-Negro institutions in order to preserve Negro culture, history, and tradition.

The communication was transmitted by persons assuming a variety of roles: The president of the National Foundation for Negro Colleges, a senior and president of the student council in a leading Negro university; a professor of history in one of the country's leading universities; a white southern "ordinary citizen."

Each of the four communications was presented to a different experimental group. Preliminary testing indicated that a large majority of the subjects would initially oppose the message presented in the communication. There was also a control group, which was not exposed to any communication at all.

After exposure to the communication, the subjects in each experimental group filled out attitude questionnaires, designed to measure the extent of their agreement with the communicator. The questionnaires were uniform with respect to issue relevance, but the conditions under which they were administered created differences with respect to surveillance and salience.

FINDINGS AND CONCLUSIONS

In the judgment of the author, the results of the experiment lent considerable support to the three hypotheses being tested:

(1) Attitudes adopted from a communicator whose power is based on means-control will tend to be expressed only under conditions of surveillance by the communicator. The mediating process postulated is compliance.

(2) Attitudes adopted from a communicator whose power is based on attractiveness will tend to be expressed only under conditions of salience of the subject's relationship to the communicator. The mediating process postulated is identification.

(3) Attitudes adopted from a communicator whose power is based on credibility will tend to be expressed under conditions of relevance of the issue, regardless of surveillance or salience. The mediating process postulated is internalization.

Comment by Reviewer

A conceptual framework of great relevance to research utilization.

OPINION CHANGE

ANALYSIS

Kelman, Herbert C. Processes of opinion change. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 509–517.

PURPOSE

The author distinguishes among three different opinion change processes.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

Kelman identifies three processes of opinion change: Compliance, identification, and internalization.

(1) Compliance occurs when an individual accepts influence from another person or

from a group because he hopes to achieve a favorable reaction from the other.

(2) Identification occurs when an individual adopts behavior derived from another person or a group because this behavior is associated with a satisfying self-defining relationship to this person or group.

(3) Internalization occurs when an individual accepts influence because the induced behavior is congruent with his value system.

(4) In the attached table Kelman summarized the distinctions among the three processes.

Comment by Reviewer

Kelman's theory offers a way of looking at the various approaches that will have to be utilized in "persuading" individuals to make use of research findings in their work. Ideally, we should be aiming at internalization.

	Compliance	Identification	Internalization
		ANTECEDENTS	
1. Basis for the importance of the induction.	Concern with social effect of behavior.	Concern with social anchorage of behavior.	Concern with value congruence of behavior.
2. Source of power of the influencing agent.	Means control	Attractiveness	Credibility.
3. Manner of achieving prepotency of the induced response.	Limitation of choice behavior.	Delineation of role requirements.	Reorganization of means-ends framework.
		CONSEQUENTS	
1. Conditions of performance of induced response.	Surveillance by influencing agent.	Salience of relationship to agent.	Changed perception of values related to issue.
2. Conditions of change and extinction of induced response.	Changed perception of conditions for social rewards.	Changed perception of conditions for satisfying self-defining relationships.	Changed perception of conditions for value maximization.
3. Type of behavior system in which induced response is embedded.	External demands of a specific setting.	Expectations defining a specific role.	Person's value system.

RESEARCH UTILIZATION ANALYSIS

Klein, Helen D. The Missouri story, a chronicle of research utilization and program planning. Paper presented at the National Conference of Social Welfare, May 1968.

PURPOSE

A summary of conditions necessary for research utilization and some impact of research in Missouri.

METHOD

The author draws her ideas from her own experiences and knowledge.

FINDINGS AND CONCLUSIONS

Conditions necessary for research being effectively used in practice are:

(*a*) It must be translated from research terminology into lay language.

(*b*) The implications for practice must be stated in clear cause and effect statements.

(*c*) The findings must be sound.

(*d*) The applicability to the specific local area must be unquestionable.

(*e*) There must be forceful, professional leadership to bring the information to the public.

(*f*) The total staff familiar with the findings must direct reports to grassroot levels.

2. When factual presentation shows the mentally ill can get well faster, remain well longer, and that the costs are less and that more people can be treated by one system than another, legislators and others will respond. In Missouri, this has resulted in beginning change from large State hospitals to small, local intensive care units.

3. Concomitant with this study, an effort was made to determine how research findings per se can be made more easily usable. More powerful and more pertinent studies, presentation in a less technical form for readers with less research sophistication, inclusion of implications for practice and many varieties of introductory or concluding summaries were the most frequent suggestions. One suggested innovation was a pocket-sized scientific reader's digest for review of interdisciplinary research from other periodicals and books.

Comment by Reviewer

This paper also comments on the FDI system described elsewhere (Matheson and Sundland) noting that a personalized information service contributes greatly to staff development.

ADOPTION ANALYSIS

Klonglan, G. E., and Coward, E. W., Jr. The concept of symbolic adoption: A suggested interpretation. *Rural Sociology*, 1970, 35(1), 77–83.

PURPOSE

The purpose of the paper is to illustrate the place of symbolic adoption in the adoption process. By symbolic adoption, the authors mean the component of the adoption process during which the idea is accepted, in contradistinction to the use component in which the material object or practice is accepted.

METHOD

The concept is evolved analytically, with abundant reference to relevant literature.

FINDINGS AND CONCLUSIONS

1. By perceiving adoption as a two-phase process (symbolic and use), it is possible to derive new insights into the phenomenon of lag or disjuncture in the adoption process. This lag frequently occurs after symbolic adoption has taken place. The user may be deterred from completing the adoption process because of a variety of barriers: action or inaction of others involved in the adoption; a situational context which makes the timing of the adoption inappropriate.

2. The concept of symbolic adoption makes it possible to pinpoint more precisely the variables which have a bearing on the total adoption process. For example, the following hypothesis is advanced: sociological variables (such as congruence) will be most important in explaining symbolic adoption, whereas economic variables (such as profitability) will be relatively more important in explaining use adoption.

3. Decisions concerning rejection and discontinuance can be interpreted in light of the concept of symbolic adoption. There are two classes of rejection: Symbolic rejection and trial rejection. Discontinuance of use of an innovation may contribute to the symbolic rejection by others, to the trial rejection by others, or to the discontinuance by others.

Comment by Reviewer

The authors point out that the concept of symbolic adoption has been used by most scholars to denote adoption of a nonmaterial idea or position. They depart from this accepted interpretation to present symbolic adoption as pertinent to the total adoption process of any innovation—material or nonmaterial.

Although their exploration of this approach in the brief article which is summarized is admittedly very tentative, they provide a provocative additional dimension for more refined analysis of the adoption process.

RESEARCH UTILIZATION
DESCRIPTION-ANALYSIS

Kogan, Leonard S. The utilization of social work research. *Social Casework*, 1963, 44, 569–574.

PURPOSE

Kogan traces the consequences and sequelae of several research projects undertaken by the New York Institute of Welfare Research to show that the impact and utilization of research varies according to the standpoint from which it is considered—whether as specific or as general, whether as a contribution to a specific decision-making situation or as a contribution to knowledge.

METHOD

The generalizations drawn by Kogan about research utilization stem primarily from personal experience and observation. The author gives several examples from his period of service and then draws some concluding observations.

FINDINGS AND CONCLUSIONS

1. *Examples of Research Studies and Their Utilization.*

- (*a*) *Studies of movement.*—This was a series of studies carried out from 1945 to 1957 designed to attain a standardized method of measuring the results of social casework. Citing a bibliography on development, utilization, and appraisal of movement scales as evidence, Kogan asserts that this research was being used in a rather wide variety of institutions and organizations.
- (*b*) *Study of the use of case records.*—The institute conducted a study on records kept by caseworkers, concluding that the design and content of the case records should be determined primarily by their utility to the worker in serving the clients. Suggestions were made for modifications and improvement based on the data. The results from this study were discussed, but action on the recommendations was tabled. It wasn't till several years later that some changes were made, and these were after another study had been conducted.
- (*c*) *Study of open-floor plan.*—This investigation was designed to determine the acceptability of a new type of office plan. Employees involved in a trial setup were interviewed to determine their satisfactions with the new arrangements. The evidence was overwhelmingly negative. The findings from the study contributed to a practical administration decision to adopt an older, more conventional office plan. In this case the research was utilized immediately.
- (*d*) *Study of short-term cases.*—After reviewing the results of two different ways of handling short-term cases, the researchers found one method to be distinctly superior in achieving results. When patients were referred (social worker making the contacts) to another agency, 80 percent received service. When the caseworker chose to "steer" the client only 40 percent received needed aid. The study revealed that steering, while less effectual, was the more common practice among social workers. This research went unheeded.

2. Although there are specific reasons for each instance of nonutilization there are some general factors that contribute to nonutilization of research findings.

- (*a*) *The nature of the research and the research report.*—Several reasons for nonutilization can be subsumed under this heading: (1) The results and recommendation may be stated ambiguously and be so beset with conditions that they are not readily applicable, (2) the research itself may be of dubious quality, so that the resulting recommendations must be held in question, (3) the language of the report may be so technical that the flow of information to individuals who would make practical use of it is obstructed.
- (*b*) *The user's characteristics and role power.*

—The motivation, capacity, and actual power of the practitioner to introduce change must be considered. Unless the users understand the research and are motivated to accept the findings and further have the power to implement it, there will be little opportunity to get the research into practice.

(*c*) *Interactions and transactions between researchers and user.*—It is an accepted maxim that research has a better chance of being utilized if there have been cooperative efforts between the researcher and user at all phases of the research. Lack of cooperation is not only likely to prejudice users against the information in that particular study, but also is likely to widen the gap between user and researcher in general.

(*d*) *Setting within which the research and the potential application take place.*—The organizational environment with its different programs, concern with costs and effects of modifications is likely to influence research utilization. Organizational variables are often overlooked, and they are often most influential in determining utilization of research.

Comment by Reviewer

The bases for nonutilization are very well formulated, and of particular relevance because they are derived from research projects observed and followed by the author.

RESISTANCE TO CHANGE
THEORETICAL ANALYSIS

LaPiere, Richard T. Adoption and the adopter. In R. T. LaPiere, *Social change.* New York: McGraw-Hill, 1965, pp. 174–212.

PURPOSE

The chapter which is herewith summarized is a segment of a textbook dealing with the entire subject of social change from a broad historical perspective. It should be read in that context.

METHOD

Analytical, with a historical orientation.

FINDINGS AND CONCLUSIONS

1. Sometimes there are valid reasons for resistance to the adoption of innovation (the prior one didn't work out well, for example), but more frequently the resistance has covert bases beyond those expressed.

(*a*) There is a pervasive fear of the unfamiliar. "Fear of the unknown can even override the certainty of acute physical pain."

(*b*) Resistance may be based on moral sentiments, principles, and precepts, not always recognized by the resistors. (Refusal in India to kill and eat a sacred cow despite famine; resistance to birth control among Catholics despite problems of overpopulation.)

(*c*) Resistance is sometimes based on aesthetic values. (Resistance to use of hydrogenated vegetable oils in place of lard in cooking, cholesterol to the contrary notwithstanding, because the oil seemed tasteless and the pastries prepared with it seemed to lack texture.)

(*d*) Sometimes elaborate rationalizations are advanced as the basis for resistance, because the foregoing moral and aesthetic considerations are not recognized. For example, travel by train was once resisted on the premise that the human body could not survive traveling at the rate of 30 miles per hour.

2. There are, however, some rational bases for resisting an innovation.

(*a*) It is often a threat to vested interests in skills and knowledge. (The availability of synthetic paints and roller techniques of applying them have downgraded the position of painter.)

(*b*) Status is threatened, too.

3. "Widespread individual resistance to an innovation may become mobilized into organized

opposition, of which the simplest form is that arising informally among the members of a residential community, an occupational grouping, or a social class." Our society abounds in examples * * * the Ku Klux Klan, the antivivisection movement, etc.

4. Certain characteristics of the adopter are identified.

(*a*) Conservative and successful persons tend to resist innovation. The person who is marginal and has nothing to lose will more willingly be an adopter.

(*b*) A person bent on upward mobility will often embrace an innovation in the hope that it will speed him on his way.

(*c*) Occasionally an adoption will be led by persons with prestige and then the innovation, through the halo effect, will spread. (The fact that in England in the late 19th century socialism was taken up by Shaw and other intellectuals gave the ideology a respectability it never achieved in America.)

5. The course of the adopter cycle may be traced as follows: initial resistance, accelerated acceptance once it is adopted, tapering off. He takes the position that virtually no innovation, however drastic it may seem during its "up" phase in the cycle, really revolutionizes the affairs of man.

Comment by Reviewer

LaPiere's conceptualization of resistance as possibly rational as well as irrational in addition to the over/covert distinction provides helpful insight for the diagnosis and reduction of resistance.

CHANGE PROCESS

ANALYSIS AND SUGGESTIONS

Lewin, Kurt. Quasi-stationary social equilibria and the problem of permanent change. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 235–238.

PURPOSE

The author analyzes the change process, suggesting three steps necessary for effecting real change.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

Basically, the change process involves three steps: Unfreezing, moving, and freezing. The attitudes, beliefs, and practices that keep the individual or organization at the present level must be unfrozen. The individual or organization must move to a new level or mode of behavior, and then be frozen at this new level. Unless all three aspects of the change process are effected the change is likely to be only temporary.

Comment by Reviewer

Applied to the area of research utilization these concepts would suggest that in order to secure research utilization by practitioners the following steps might be taken:

(1) Individuals or groups need to have the present attitudes, beliefs, and behavior with respect to research findings unfrozen. Since in most cases these are unfavorable attitudes, the practitioner may need help in developing favorable attitudes and beliefs about the relevance of research findings in their work situations.

(2) Moving practitioners to the new level of attitude and behavior required to insure utilization of research findings may involve training and assistance to make sure they have the ability to use relevant research.

(3) Freezing the practitioners at a level of attitude and behavior that involves regular use of research may involve helping the practitioner experience success with research utilization.

RE-EDUCATION
ANALYSIS

Lewin, K., and Grabbe, P. Principles of reeducation. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 503–509.

PURPOSE

The authors outline principles related to the process of reeducation.

METHOD

The ideas in this paper are based on the broad experience and observations of the authors.

FINDINGS AND CONCLUSIONS

1. Reeducation affects the individual in three ways—

(*a*) it changes his cognitive structure, the way he sees the physical and social worlds, including all his facts, concepts, beliefs, and expectations;

(*b*) it modifies his valences and values, and these embrace both his attractions and aversions to groups and group standards, his feelings in regard to status differences, and his reactions to sources of approval or disapproval; and,

(*c*) it affects motoric action, involving the degree of the individual's control over his physical and social movements.

2. The authors suggest a number of principles to keep in mind when attempting to create changes in cognitive structures:

(*a*) Even extensive firsthand experience does not automatically create correct concepts (knowledge).

(*b*) Social action no less than physical action is steered by perception.

(*c*) As a rule the possession of correct knowledge does not suffice to rectify false perception.

(*d*) Incorrect stereotypes are functionally equivalent to wrong concepts (theories).

(*e*) Changes in sentiments do not necessarily follow changes in cognitive structure.

(*f*) A change in action ideology, a real acceptance of a changed set of facts and values, a change in the perceived social world are different expressions of the same process. "Reeducation is only successful if a change in the system of which the individual is a part is also successful. If reeducation succeeds only to the degree that the individual becomes a marginal man between the old and new, nothing worthwhile has been accomplished."

(*g*) Acceptance of the new set of values and beliefs cannot usually be brought about item by item.

(*h*) The individual accepts the new system of values and beliefs by accepting belongingness to a group. The group provides a cushion for the individual. The acceptance of the new system is linked with the acceptance of a specific group, a particular role, a definite source of authority as new points of reference.

Comment by Reviewer

Research utilization may require reeducation of both researchers and practitioners. Mental health practitioners and the systems in which they work must learn to value research findings.

RESEARCH UTILIZATION
CASE STUDIES/ANALYSIS

Likert, R., and Lippitt, R. The utilization of social science. In L. Festinger and D. Katz (Eds.), *Research methods in the behavioral sciences.* New York: Dryden Press, 1963.

PURPOSE

The authors seek to identify ways in which social practitioners and all citizens can utilize the resources of social psychology to improve personal insight, policymaking, program planning, and individual and group action.

METHOD

The paper is developed on the basis of the authors' analysis, based on their own experiences, the literature, and case material. They explore two major areas: The situation in which there is a desire to apply scientific knowledge discovered elsewhere to the solution of an existing problem, and the situation in which there is a desire to apply research procedures directly to help solve an existing problem.

FINDINGS AND CONCLUSIONS

1. With respect to using knowledge and theory derived from research carried out elsewhere, the following points are made:

(*a*) There must be motivation to seek and use scientific resources. If motivation does not exist, it must be stimulated by demonstrations of potentiality, by complacency shock, and other approaches.

(*b*) Operating problems must be redefined and reformulated so that the potential user can perceive the relevance of scientific research done elsewhere.

(*c*) The social scientist, functioning as change agent, must orient himself to the action problem as the practitioner sees it in order to do an intelligent job of selecting appropriate scientific resources for application to this particular situation.

(*d*) The social scientist should interpret data to the practitioner within the framework of behavioral dynamics.

(*e*) The social scientist must help the practitioner understand the methodology of research application by facing such questions as the comparability of populations, comparability of situational dynamics, extrapolation of theoretical generalizations to different situations, and experimental mindedness in trying new solutions.

(*f*) The practitioner must be aided in interpreting, planning, and executing specific steps of action in his own situation. This requires creative and realistic thinking about "what would happen if" although the research which is being applied may be directed to quite a different level of questioning, such as "why things are the way they are."

2. With respect to situations in which research methods are applied directly to problems of organizations, the authors devote considerable attention to a description of how to set up an internal research department. Since this is of only secondary relevance to research utilization, it is not included in this summary. However, within the foregoing discussion, a section on "Assuring Use of Research Results" is highly relevant, and the following points are abstracted:

(*a*) Induce cooperative rather than defensive attitudes.

(*b*) Encourage participation of all concerned in planning and interpretation.

(*c*) Plan for a presentation of preliminary findings to help win acceptance of research results.

(*d*) Encourage the use of self-analysis techniques to promote the use of results:

  (1) State the results as objectively as possible.
  (2) Let the group itself work out the interpretation of data.
  (3) Resistances should be recognized and worked through, not glossed over.
  (4) Let the group set its own pace with respect to accepting and applying the findings.

(5) Present the results in a positive atmosphere, emphasizing first the results which show what is being done well.
(6) Provide opportunities to save face.
(7) Present the results in simple, nontechnical language in order to help the group realize that the data deal with their situation and are not something belonging to the research organization.

(*e*) Use hierarchical sources of influence; enlist support of top management.
(*f*) Use data so that it presses for action.
(*g*) Appraise the use of research results by remeasurement.

Comment by Reviewer

In this presentation the social scientist is perceived, not primarily as the researcher, but as the change agent. The techniques for performing this knowledge-linking role are advanced.

CHANGE AGENT
ANALYSIS

Lippitt, Ronald. Dimensions of the consultant's job. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 156–162.

PURPOSE

The author explores the function of the consultant in the change process and identifies some of the major challenges in that role.

METHOD

The approach is analytical, with the perceptions drawn from the author's considerable experience in the field.

FINDINGS AND CONCLUSIONS

1. The consultation relationship is defined as a voluntary relationship between a professional helper (consultant) and a help-needing system (client) in which the consultant is attempting to give help to the client in the solving of some current or potential problem.

(*a*) The relationship is perceived as temporary by both parties.
(*b*) The consultant is an "outsider"—that is, not a part of any hierarchical power system in which the client is located.

2. The consultant's first task is to identify the difficulty, determine its source, and find out what is maintaining it.

(*a*) To accomplish this task, he needs both a systematic theory (such as: Psychoanalytic theory, structure-function theory, learning theory, social conflict theory), and a diagnostic theory.
(*b*) Typical diagnostic orientations include:
  (1) An inappropriate distribution of power, too diffuse or too centralized.
  (2) Blockage and immobilization of productive energy.
  (3) Lack of communication between the subparts of the system.
  (4) A lack of correspondence between external reality and the situation as perceived by the client.
  (5) A lack of clarity or commitment to goals for action.
  (6) A lack of decisionmaking and action-taking skills.

3. The consultant must attempt to identify his own motivations for becoming involved in the helping relationship.

(*a*) He would do well to be aware that efforts to stimulate change are sometimes perceived as manipulative.
(*b*) Great sensitivity is required to determine when it is prudent to initiate change-making activities. Is it done on the basis of individual welfare? Group welfare? Institutional welfare?

4. The consultant should assess the client's motivations with respect to change.

5. He should assess his own resources for giving the sort of help that is needed.

   - (*a*) Can he provide continuity—that is, stay with the client to make sure his suggested improvements are soundly implemented?
   - (*b*) Does he have training and therapeutic skills to match his skill at diagnosis?

6. In establishing a consulting relationship, the following preliminary steps are suggested:

   - (*a*) The client group must be helped in developing awareness of its needs.
   - (*b*) A trial period, during which expectations are clarified, is recommended.
   - (*c*) The consultant should establish relationships with the total client organization and avoid getting trapped with subgroups.

7. These phases of the change process through which the consultant guides the client include:

   - (*a*) The development of a need for change.
   - (*b*) The establishment of a consulting relationship.
   - (*c*) The clarification of the client problem.
   - (*d*) The examination of alternative solutions and goals.
   - (*e*) The transformation of intentions into actual change efforts.
   - (*f*) The generalization and stabilization of a new level of functioning or group structure.
   - (*g*) Achieving a terminal relationship with the consultant and a continuity of change ability.

8. A successful process of consultation with an organization ends with at least three kinds of learnings:

   - (*a*) The organization has learned to cope more adequately with the problems which initiated the consulting process.
   - (*b*) The organization has learned how to function more adequately in clarifying future problems as they emerge and to seek outside help when needed.
   - (*c*) The organization has learned new techniques for maintaining organizational health.

Comment by Reviewer

Helpful and succinct guidelines for the change agent.

EDUCATIONAL CHANGE
ANALYSIS

Lippitt, Ronald. Roles and processes in curriculum development and change. In R. R. Leeper (Ed.), *Strategy for curriculum change.* Washington, D.C.: Association for Supervision and Curriculum Development, 1965.

PURPOSE

In this article, Lippitt analyzes the change process in education. He outlines the problems confronting any change effort, presents a simple change model and suggests several factors that could help establish a favorable atmosphere for change.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. *Change Problems in Education.*—Lippitt sees the following as the problem areas confronting educational change efforts:

   - (*a*) Most significant changes in education imply and require some changes in the attitudes, skills, and values of the practitioner in order to implement the change successfully. Lippitt asserts this factor differentiates education from agriculture or industry where innovation adoption is often possible without deep attitude or value change. For example, the adoption of a new type of seed corn doesn't require a value change on the part of the farmer.
   - (*b*) A great proportion of the significant new inventions in education remain quite invisible, undocumented, inaccessible for consideration by potential adopters.
   - (*c*) A generally negative attitude surrounds

the individual inventor. In education the teacher is often responsible for being her own inventor, thus stirring up negative attitudes toward herself when she is inventive.

(*d*) There is a significant lack of professional communication networks and change agents.

(*e*) Often colleague relations inhibit the trial and adoption of new ideas.

(*f*) There is a very significant lack of creative interdisciplinary work between teachers (practitioners) and the social science fields.

(*g*) There is lack of clear feedback to reinforce change efforts.

(*h*) There is a feeling among administrators, that there will be reactions against experimentation in the larger community of parents, agencies, organizations, and boards of education.

2. *The Change Process.*—After reviewing several models of change, Lippitt represents the change process as: Identification, development, and diffusion. Feedback is a crucial factor in all three phases of the change process.

3. *Change at Different Hierarchical Levels.*—The author suggests that there are different levels at which educational innovation can occur. There is danger in attempting to implement change through levels that are nonrelevant. The educational levels he outlines are: (*a*) The classroom level, (*b*) the school building level, (*c*) the school system level, (*d*) the community system level. Some changes require a system level adoption before individual teachers can use the innovation in the classroom, others require only that the teacher be convinced of their value and willing to experiment with use. The effic implementation of educational changes requ an analysis of the organizational level at wl the innovation must be adopted before it can be used.

4. *Factors Promoting a Favorable Atmosphere for Change.*—According to Lippitt the following factors should help to promote a favorable attitude toward change in education within the next few years.

(*a*) The action of the government.

(*b*) The explosion in continuing education plans and opportunities.

(*c*) Development of materials available for teachers.

(*d*) Demonstration projects within schools and regions.

(*e*) Development of resource libraries and retrieval systems.

(*f*) Development of communication technology.

(*g*) Use of human aides.

Comment by Reviewer

A very general article. Change problems in mental health are probably closely allied to those in education.

RESEARCH UTILIZATION ANALYSIS

Lippitt, Ronald. The use of social research to improve social practice. *American Journal of Orthopsychiatry*, 1965, 35(4), 663–669.

PURPOSE

This paper explores the processes by which scientific knowledge and scientific personnel can be used to help develop and validate significant improvements in educational and social practice.

METHOD

The author draws upon his professional experience, particularly as program director of CRUSK. Specific CRUSK projects are cited in support of the generalizations advanced.

FINDINGS AND CONCLUSIONS

1. Six patterns of use of scientific resources are identified.

(*a*) An action design can be developed by the retrieval of relevant research findings, an analysis of implications and the subsequent formulation (through brainstorming, for example) of a program design.

(*b*) An experimental program can be designed, tested for feasibility outside the system, and, if it proves successful, recommended for adoption.

(*c*) Creative innovations can be identified in a comparable practice setting and practitioner-to-practitioner communication can be improved.

(*d*) An organization or agency can contract with a professional team to collect diagnostic data relevant to a specific problem, analyze it, and provide feedback.

(*e*) Outside applied researchers can supervise a self-study process within the organization.

(*f*) Practitioners can be trained to be consumers of science and of scientific resources in order to be effective users of scientific knowledge.

2. The following special characteristics of research utilization in the social sciences (as distinguished from the physical and biological sciences) are cited:

(*a*) Adoption of significant new educational or social practices call for changes in values, attitudes, and skills; hence a deeper personal involvement and potentially more problems of resistance.

(*b*) Changes in mental health or education are more likely to be adaptations rather than adoptions of the innovations of others. Innovation is a new pattern of behavior rather than a new thing (piece of agriculture equipment, new drug, etc.).

(*c*) The concept of "social invention" is not adequately developed. Hence, procedures for documenting and validating are sketchy or nonexistent; many creative new practices are invisible and inaccessible.

(*d*) The social practitioner gets very littl feedback about the effectiveness of hi adoption effort.

(*e*) There is very little impetus for the practitioner in education or mental health t take risks in searching for and using new resources.

(*f*) In the social practice fields, linkage is particularly inadequate between researcher and practitioner.

3. The foregoing analysis suggests some specific functions of the linking agent in the social practice fields.

(*a*) He must not only identify the appropriate knowledge sources but help the practitioner work through the implications of the knowledge for his specific setting.

(*b*) He must provide training to the practitioner group in diagnosis of problems and implementation of change.

(*c*) He must (in addition to linking researcher to practitioner) link creative practitioners to each other.

Comment by Reviewer

A closely reasoned presentation with many points which are explicitly relevant to the mental health field.

EDUCATIONAL INNOVATION
FIELD EXPERIMENT AND ANALYSIS

Lippitt, Ronald, et al. The teacher as innovator, seeker, and sharer of new practices. In R. E. Miller (Ed.), *Perspectives on educational change.* New York: Appleton-Century-Crofts, 1966, pp. 307–324.

PURPOSE

Teachers' general reluctance to change is discussed in terms of the forces that facilitate and those that hinder innovation and diffusion in the field of education; the preliminary findings of a field experiment dealing with the innovation-diffusion process among teachers are discussed.

METHOD

The analysis of facilitating and hindering forces in educational change was generated from a series of meetings with school personnel.

The field experiment consisted of a project sponsored jointly by the Center for Research on the Utilization of Scientific Knowledge (CRUSK) and the Department of Classroom Teachers of the Michigan Educational Association which was designed to encourage more communication and support among teachers and other educational professionals during innovation and diffusion of new teaching practices.

Area teams, composed of teachers (selected as opinion leaders), counselors, principles, librarians, superintendents, curriculum coordinators, and assistant superintendents, were developed for each of four participating school districts. The teams were designed to function as a liaison group between the CRUSK staff, the Department of Classroom Teachers, and Teachers in the school systems and were given responsibility for developing and implementing the plans for stimulating innovation and diffusion.

FINDINGS AND CONCLUSIONS

1. Innovation and change in education often involves changing the attitudes, values, and behavior patterns of teachers and administrators. Therefore, it demands more commitment, risk taking, and help from outsiders than innovation and change in fields where innovation involves nothing more than the introduction of new physical products.

2. The forces that facilitate and hinder innovation and diffusion in the teaching field can be related to: (*a*) Characteristics of the practice, (*b*) physical and temporal arrangements, (*c*) peer and authority relations, and (*d*) personal attitudes. A list of these forces follows.

FORCES RELEVANT TO THE FACILITATION AND HINDRANCE OF INNOVATION AND DIFFUSION OF TEACHING PRACTICES

Facilitating forces	*Hindering forces*
1. Characteristics of the Practice	
A. Revelant to universal student problems.	A. Does not meet the needs of a class.
B. Can be done a little at a time.	B. Requires a lot of energy.
C. Consultant and peer help available, needed skills are clearly outlined.	C. Requires new skills.
D. Clearly aids student growth.	D. Requires change in teacher values.
E. A behavioral change with no new gimmicks.	E. Requires new facilities.
F. Built in evaluation to see progress.	F. Won't work.
G. Innovation has tried a new twist.	G. Not new.
H. Student, not subject, oriented.	H. Not for my grade level or subject.
I. No social practice can be supplicated exactly.	I. Effectiveness reduced if practice gains general use.
2. Physical and Temporal Arrangements	
A. Staff meetings used for professional growth, substitutes hired to free teacher(s) to visit other classrooms, lunchtime used for discussions, students sent home for an afternoon so teachers can all meet together.	A. No time to get together.
B. Extra clerical help provided.	B. Too many clerical duties to have time to share ideas.
C. Staff meetings for everyone to get together, occasionally; grade level or departmental meetings.	C. Classrooms are isolated.
D. Meetings held in classrooms.	D. No rooms to meet in.
3. Peer and Authority Relations	
A. Sharing sessions or staff bulletins become a matter of school routine.	A. Little communication among teachers.
B. Public recognition given to innovators and adopters; innovation diffusion seen as a cooperative task.	B. Competition for prestige among teachers.
C. Sharing ideas is expected and rewarded; norms support asking for and giving help; regular talent search for new ideas.	C. Norms enforce privatism.

FORCES RELEVANT TO THE FACILITATION AND HINDRANCE OF INNOVATION AND DIFFUSION OF TEACHING PRACTICES

Facilitating forces	*Hindering forces*
3. Peer and Authority Relations	
D. Area team liaison supports new ideas.	D. Colleagues reject ideas.
E. Principal or superintendent supports innovation-diffusion activity.	E. Principal is not interested in new ideas.
F. Principal helps create a staff atmosphere of sharing and experimentation.	F. School climate doesn't support experimentation.
G. Staff meetings used as two-way informing and educating sessions.	G. Principal doesn't know what's going on.
H. Teachers influence the sharing process.	H. Teacher ideas don't matter.
4. Personal Attitudes	
A. Seeking new ways.	A. Resisting change.
B. Seeking peer and consultant help.	B. Fearing evaluation and rejecting failure.
C. Always open to adapting and modifying practices.	C. Dogmatism about already knowing about new practices.
D. Public rewards for professional growth.	D. Feeling professional growth not important.
E. See groups as endemic and relevant for academic learning.	E. Negative feelings about group work.
F. Understand connection between mental health and academic learning.	F. Mental health is "extra."
G. Optimism.	G. Pessimism.
H. Test ideas slowly.	H. Afraid to experiment.
I. Suiting and changing practice to fit one's own style and class.	I. Resistance to imitating others.

3. There are two basic processes for linking teachers to new resources and supporting their innovative efforts:

(*a*) *Vertical linking.*—Vertical linkings are bridges between the teacher and higher status individuals who can provide information and needed resources. The most common vertical linkage is between teachers and administrators and/or supervisors. A vertical linkage that might be utilized more effectively is between the teacher and research consultant.

(*b*) *Horizontal linking.*—Horizontal linkages are the connections between teachers who are interested in sharing or adopting relevant teaching innovations.

4. Certain factors related to teachers and their perceptions affect innovation and diffusion.

(*a*) The innovative practice must be seen as relevant, helpful, and appropriate to the teacher's classroom goals and personal style of classroom management.

(*b*) Teachers who believe they are influential and are perceived as influential by their colleagues innovate and share more than teachers who are not perceived in this way.

(*c*) Teachers who perceived colleague support in adoption efforts were more likely themselves to be adopters of new practices.

(*d*) Teachers who perceive a principal as supporting innovation do, in fact, innovate more often.

(*e*) Teachers who are self-confident are more willing to share their classroom activities and information about these activities with their peers with a minimum of fear and rejection.

(*f*) Teachers who are highly committed to the profession appear more willing to engage in discussions about their profession and professional activities than teachers who are not so highly committed.

(*g*) Teachers who are generally open and ready to share also seem to be more willing to talk about professional educational experiments than other teachers.

(*h*) The younger and older teachers appear to be more innovative and adoption oriented than the middle range of teachers; older teachers tend to be potential adopters more than do younger teachers, but younger teachers seem more innovative.

5. The social (communication) structure of the school seems to have a different effect on adoption than on innovation.

(*a*) In schools with a diffuse social structure where almost every teacher was linked to someone, teachers innovated and shared more than in schools with a hierarchical or nondiffused communication structure.

(*b*) In those schools where the structure was more hierarchical, teachers adopted more often than in schools with a diffuse structure.

(The differences in the innovation adoption findings are explained in the following manner: "Since innovation involves novelty and risk, it is reasonable that schools with open communication and support systems encourage innovation. * * * Adoption efforts, however, do not appear to involve the same personal risks as innovation, since it is more a matter of following or modifying another's efforts.")

6. Teachers involved in small groups of two or three were more innovative than those who were isolated or involved in large groups, while teachers who saw themselves in positions peripheral to either large or small groups were more apt to adopt than those centrally involved.

7. In schools where the principal is sensitive and accurate about the nuances of peer relationships among teachers, more sharing is done and diffusion occurs.

8. The greater the frequency with which the principal was seen engaged in such activities as offering constructive suggestions to teachers, bringing educational literature to their attention, talking to them about their personal and professional activities and growth, or showing that he knows what was going on in classrooms, the greater appears to be his influence on the degree of innovation and adoption. More than one-third of the teachers who viewed the principal as bringing educational literature to their attention adopted new practices, while those who viewed him as never bringing such literature to their attention did not adopt new classroom practices.

Comment by Reviewer

These findings can be utilized to provide more effective support and encouragement for practitioners in their efforts to seek, share, and try new practices. Since research utilization can be considered an innovative practice for most mental health practitioners, they will need the help and support of both peers and superiors during the adoption of such practices.

RESEARCH UTILIZATION
PILOT STUDY

Lippitt, R., and Butman, R. W. *A pilot study of research utilization aspects of a sample of demonstration research mental health projects.* Final report for contract No. PH-43651047, National Institute of Mental Health, 1969.

PURPOSE

The stated purpose of the pilot study was: (1) To find out what happened to projects funded under the title V grant program, in terms of such criteria as the development of program models, the continuation of the operation of the model after termination of the grant, documentation of the model in a manner suitable for diffusion and adoption, validation of the model through evaluation procedures, accessibility to inquiry from others interested in considering adoption; and (2) to develop a methodology and plan for more comprehensive exploration of title V demonstration grants and other funded activities.

METHOD

Some 36 demonstration projects, distributed among five Midwestern States, constituted the sample. For each project, the proposals were studied and site visits were carried out. The data thus gathered were analyzed in terms of the following questions: What is the meaning of "payoff" for a particular project? Which aspects of project design have the most important relationship to project payoff (that is, diffusion)? How widespread and deliberate is the preparation and planning for diffusion, and what relationship does this have to project payoff? (The process of analysis involved only 30 of the projects in the sample, six having been discarded for a variety of reasons.) In the analysis, the independent variables were information about planning, execution of demonstration, and involvement in spread effort. The dependent variables represented the diffusion that resulted after demonstration. In summarizing the results of their payoff analysis, the investigators organized their findings in terms of whether the project was carried out by an organization other than the sponsor (sponsor-host projects) or whether only a single service-delivering organization was involved (single-site project).

FINDINGS AND CONCLUSIONS

1. Sponsor-host projects place more emphasis than do single-site projects on research and validation as the means to prepare the results of demonstration for communication to target adopter organizations. The single-site project tends, instead, to be service oriented.

2. High payoff is more likely for sponsor-host projects: (*a*) When existing personnel are involved in the demonstration, (*b*) when there is little change in structure or roles, (*c*) when there is good coordination between personnel performing different functions or in different organizations, and (*d*) when this coordination is aided by training and/or opportunities for continuous communication. Single-site projects do not have comparable linkage problems; they are not usually required to use personnel in unfamiliar roles and they rarely have to coordinate with other organizations, except to borrow resources.

3. Pretesting does not contribute to payoff in either type of demonstration setting.

4. Perception of diffusability contributes to payoff in either type of demonstration setting.

5. The spread function is often performed in the sponsor-host condition; it is uncommon in the single-site condition.

6. When project personnel have an opportunity to share the innovation with others, high payoff is likely, whether or not the innovation has been documented or evaluated, and regardless of prior concern about spread.

7. High payoff is more characteristic of projects where key personnel remained after the funded period.

8. High payoff apparently occurs when personnel are available, when demonstration is easy to handle, when opportunities to promote use are available, when personnel are motivated to spread and when the energies directed toward spread are sufficient to capitalize on other conditions.

9. The following implications for future use of demonstration are cited by the investigators:

(*a*) Linkage of resources needs to be more numerous, better handled, and well thought out.

(*b*) All projects need to have more awareness of the needs of potential adopters and the means to assess and evaluate ways of communicating with them.

(*c*) Projects could benefit from a "feasibility of demonstration" analysis before the proposal is written or as the second step in a two-step proposal.

(*d*) Projects need continuing support of consultants throughout the operational period; these troubleshooters can aid with training, documentation of project, developing rapport between researchers and practitioners, planning and carrying out continuation efforts.

(*e*) Projects need help with planning and carrying out spread activities * * * starting in the planning phase of the project itself.

(*f*) Personnel may need some kinds of retraining experiences at the end of the project, to make the shift from operations to diffusion.

(*g*) Many of the above types of assistance could be provided by change agents developed within the funding agency or at least available to the funding agency.

(*h*) Interchange via conferences (of proposal writers, of persons focusing on the needs of demonstration projects) could resolve problems which tend to diminish payoff.

Comment by Reviewer

As conceptualized, this is a very significant and potentially illuminating study. Its findings seem not to match the scope of its purpose and methodology, but it is relevant enough to warrant inclusion in this compendium despite this seeming deficit.

RESEARCH UTILIZATION ANALYSIS

Lippitt, R., and Havelock, R. Needed research on research utilization. In *Research implications for educational diffusion.* East Lansing, Mich.: Kellogg Center for Continuing Education, Michigan State University, 1963.

PURPOSE

This is one of a group of papers presented at the National Conference on the Diffusion of Educational Ideas, held March 26–27, 1968, at Michigan State University. The overall purpose of the conference was to explore what happens within and around the local educational agency which brings about the adoption of innovations in education. The specific paper being summarized has as its stated purpose outlining the research utilization problem in education and identifying needed types of inquiry that should be attempted on research utilization.

METHOD

The content of the paper is drawn from the extensive experience of both authors. Dr. Lippitt discusses "The Process of Internal Linkage in Research Utilization" and Dr. Havelock, in the second half of the presentation, deals with "The External Process: Roles, Organizations, and Systems for Knowledge Linking." Since the Havelock segment is devoted primarily to what yet needs to be done, it is less relevant for the purposes of this study; accordingly, only the Lippitt segment is herewith summarized.

FINDINGS AND CONCLUSIONS

1. Three patterns are identified in the connections between resources for new knowledge and potential users:

(*a*) The potential adopter initiates the connection, looking for needed resources because he recognizes a need for improvement. The sense of having a problem is not necessarily enough to assure that his search will be successful. He needs to feel that the search for help is legitimized—that is, that the seeker will not be inhibited by fear of being judged. He needs to know how to ask the right question. It is important that the new knowledge be organized (perhaps by a conultant) in a way which will be applicable.

(*b*) A change agent initiates effort to communicate resources of knowledge which he believes are relevant to the target person. To be effective, this must be done in a climate of trust, with ample support to the potential user who, ideally, should not be made to feel that he is "playing for keeps" when first undertaking change.

(*c*) A third party, acting as the referral or linking agent, initiates and supports efforts to get relevant knowledge resources linked to potential consumers. This is often effected by a "temporary system" of an inside-outside team. A critical question here: How can the insider serve as innovation carrier to the system without losing his membership and status in that system?

2. Once the potential user is aware of the innovation and has decided to adopt it, his success in implementing the change can be enhanced if he engages in anticipatory rehearsal, role playing the situation of the first effort at utilization.

3. The adopting unit most needs outside support at the point of greatest risk taking. What is still not known is what types of support for adoption effort are needed for what types of innovation in what types of social contexts.

4. The potential adopter should understand that resistance within himself is natural and ac-

ceptable as he considers any new potential materials or behavior patterns. Sometimes the resistance has a realistic basis: the adopter is legitimately asking: "How does that fit into my situation?" Sometimes the resistance (within the individual as well as among members of a group) can be dispelled or clarified through human relations sensitivity training.

5. The author suggests that there is just as much danger in slavishly following the fad of change as in chronically resisting change.

6. In many cases, innovation is unsuccessful in the adopter's first attempt and hence is dropped. This initial failure may be caused by lack of proper preparation for the new practice; it may be "motivated" failure (that is, an expression of resistance); it may be caused by lack of outside support during period of risk-taking as well as lack of feedback which might lead to revision of innovation. The initial go-round of the new practice should be given the greatest possible sense of success—even if it is only success on a small scale—to insure its continuity.

Comment by Reviewer

This paper focuses more on what still needs to be learned about diffusion than on what has been learned, but the points made are drawn from extensive experience and are both logical and helpful.

CHANGE
THEORETICAL ANALYSIS

Lippitt, R., Watson, J., and Westley, B. *The dynamics of planned change.* New York: Harcourt, Brace, 1958.

PURPOSE

The purposes of the study are: (1) To compare method and operating principles of a number of professional change agents, (2) to seek a conceptual framework for helping techniques, (3) to survey research related to theories of planned change and to determine research priorities, (4) to relate findings to the training of graduate students in disciplines applicable to the change agent.

METHOD

The study is developed on the basis of review of the literature plus the extensive experience of the authors. The emphasis is on the professional change agent vis-a-vis four types of client systems: The individual, the small group, the large organization, and the community. The authors concentrate primarily on problems of planned change which occur in psychological processes, social relations, interpersonal processes, problem-solving procedures, and processes of social alignment or structure.

FINDINGS AND CONCLUSIONS

1. The following *problems of internal relationship within client systems* are identified:

(*a*) *Faulty internal distribution of power* (too highly concentrated, too diffuse, exerted in harmful or ineffective ways).—Correctively, the change agent tries to develop new centers of power or make old ones more representative of the client system as a whole.

(*b*) *Faulty internal mobilization of energy* (the neurotic individual, the fragmented community).—The change agent emphasized the contrast between productive use of energy in rational attempt to solve problems realistically and the nonproductive waste of energy in frustration and internecine conflicts. He may, in some situations, be concerned with improving the economy of energy use in already relatively healthy systems by relating the subparts of a system more effectively to the whole.

(*c*) *Breakdown in communication* (blocked situations in therapy, organizations suffering from lack of feedback).—Some change agents try to correct defective patterns of communication within a client system and others use communication as a means of exerting pressure on the client system to change. In the latter case, the concern is not so much with removing pathological barriers as with stimulating an increased flow of information.

2. The following *problems of external relationships of client systems* are identified:

(*a*) *Discrepancy between the environment as it actually exists and as it is perceived by members of the system* (autism, inappropriate frame of reference, etc.).—A client system is helped toward a new experience of reality by means of the creation of a special reality which will simplify and emphasize the cues needed for objective perception (by means of a therapeutic environment, for example, or a laboratory environment).

(*b*) *Need to bring about changes in the goals and values which guide the client system.*—The change agent sometimes simply asks the client to try new behavior in the hopes that changes in values and attitudes will follow. In other cases, the client's situation changes so that it is either forced into new behavior or led into it naturally.

(*c*) *Inadequacy of relational and problem-solving skills.*—A client system can be helped to improve its external relationships by developing skills which can be used in problem solving or in improving human relations. In fulfilling this function, the change agent acts as resource and catalyst. He does not allow a dependency relationship to spring up between himself and the client system, and he does not attempt to impose his own goals for change.

3. During the change process, *the client system is exposed (sometimes simultaneously, sometimes alternately) to change forces and to resistance forces.*

(*a*) Some change forces manifest themselves at the beginning of the change project; these include dissatisfaction and pain, perceived discrepancy between the state of affairs as it is and as it might be, and the need for change in order to keep up with varying sets of requirements (competitive pressures in industry, for example).

(*b*) Some change forces more characteristically emerge during the change process; these include the need to complete a task which has been begun, the need to meet the expectations and demands of the change agent, and the need for change to penetrate an entire system after one part of the system is significantly changed.

(*c*) Resistance forces evident early in a change project include general opposition to change, inability to change, opposition to a specific change objective, and desire to preserve existing satisfactions.

(*d*) Once a project is underway, resistance may arise from a reevaluation of costs, reassessment of difficulties encountered in the project, loss of energy and motivation, and problems in relationship with change agent.

(*e*) The interdependence among the subparts of a system and between the system and its environment can generate both change forces and resistance forces.

(*f*) Change can be impeded by outside interference rather than by internal resistance. Other projects might compete with the change project for the time, energy, and money of the client system; there might be incorrect or inadequate information about how to carry out the change project; or the environment may simply be intractable.

4. *The role of the change agent* includes the following activities—

(*a*) diagnosing the nature of the problem in the client system;

(*b*) assessing the client system's motivations and capacities to change;

(*c*) appraising the agent's own motivations and resources;

(*d*) selecting appropriate change objectives;

(*e*) choosing an appropriate type of helping role;

(*f*) establishing and maintaining the helping relationship;

(*g*) recognizing and guiding the phases of the change process;

(*h*) choosing the specific techniques and modes of behavior which will be appropriate to each progressive encounter in the change relationship; and

(*i*) contributing to the development of the basic skills and theories of the profession.

5. *Seven phases in the process of planned change* are identified and generalizations are made for each phase.

(*a*) *The development of a need for change.*—This includes an awareness of the problem, a recognition that the condition might be improved as the result of change, and a willingness to seek outside help in bringing about the change.

(*b*) *The establishment of a change relationship.*—This involves developing rapport with the change agent, making certain that the change agent understands what needs to be done and that the client system understands what sort of collaboration it must provide. In an organization, procedural questions must be settled (Who pays? How much? Who will serve as liaison?). Sometimes this phase serves as a trial period, during which the decision to work together is readily reversible.

(*c*) *The clarification or diagnosis of the client system's problem.*—Original perceptions concerning the problem are sharpened, relevant data are collected, the problem is redefined, and the client takes a new look at it.

(*d*) *The examination of alternative routes and goals; establishing goals and intentions of action.*—This is the stage in which the client system translates its diagnostic insights first into alternative means of action and then into definite intentions to change in specific ways. In this process, both cognitive and motivational problems are likely to arise.

(*e*) *Transformation of intentions into actual change efforts.*—This is the phase during which strong support from the change agent is needed. It is important, too, to get feedback from various subparts of the system and to make certain they are supporting the change.

(*f*) *The generalization and stabilization of change.*—Too often change which has been produced by painstaking and costly efforts tends to disappear after the change effort ceases, and the system, though it wanted the change, slips back into its old ways. Positive evaluation and rewards help stabilize change. Spread of change to other systems endows it with status and thus helps stabilize it. Procedural change tends to be stabilized if it is supported by structural change.

(*g*) *Achieving a terminal relationship.*—Ideally, the relationship with the change agent is terminated with the client system having learned problem-solving techniques which will carry over into new and different problems. Sometimes it is sound to train someone within the system who, to a certain extent, will serve as an ongoing replacement for the change agent.

6. Certain *specific "helping methods"* applicable to each of the above phases are cited.

(*a*) *The development of need for change:*
  (1) If the change agent initiates the change sequence, he: (1) Must make known his availability and readiness to help (publicity, brochures, organizational links); (*b*) heighten or spread sensitivity to specific problems (shock technique, using system's most sensitive persons, establishing himself within group as observer, conducting problem census); (*c*) offer help in solving acknowledged problems (sometimes exploiting existing power conflict); (*d*) create special social atmosphere in which the accepted standard is to recognize the existence of problems and the need for help (as in training laboratory).
  (2) If a third party initiates the change sequence: (*a*) The change agent must clarify to the client the relationship of the consultant to the third party (dispel suspicion of collusion for example); (*b*) the change agent should use the third party as a source of help.
  (3) If the client system initiates the change sequence, the change agent must help the client identify the need for change and the readiness for it.

(*b*) In the process of *establishing a change relationship*, the change agent should:
  (1) Assess the client's capacity to accept and use help.

209

(2) Assess the client's motivation to accept and use help (for example, Is it primarily a striving for power?).
(3) Assess his own (the change agent's) resources and motivation (Is his training applicable. Are the techniques which have worked elsewhere transferrable to this situation?).
(4) Obtain a mutuality of expectation for the change relationship (How much will it take? How many people will be involved?).
(5) Clarify expectations about the kind and amount of work which will be required.
(6) Anticipate difficulties which will emerge in the change relationship.
(7) Define the influence relationship (considerations of coerciveness and dependency).
(8) Clarify special goals of the change agent (which may not always be manifest to client).

(*c*) In the *diagnostic phase*, the change agent must:
(1) Obtain information (by direct questioning, by seeking it from neighboring systems, by demonstration of problem, by participant observation, by projective communication).
(2) Process information (by assuming generality of problem, by acting independently, by acting cooperatively with client, by encouraging client self-analysis).
(3) Stimulate understanding and acceptance of diagnostic insights.
(4) Impart diagnostic skills.

(*d*) In *establishing goals and intentions of action*, the change agent should:
(1) Define the directions of change.
(2) Arouse and support intentions to change.
(3) Provide opportunities for anticipatory testing.
(4) Develop and mobilize competence in action.

(*e*) In *initiating the change effort*, the change agent's techniques may include:
(1) Giving direct support to the client system during the initiation of change (consultation, demonstration, observation, etc.).
(2) Developing support within the larger client system for change efforts by a subpart.

(*f*) Techniques for the *stabilization of change* include:
(1) Providing credible evaluation of effects of change.
(2) Exploiting the momentum of the change effort as a stabilizing factor.
(3) Exploiting the pride of status as a stabilizing factor.
(4) Encouraging the spread of change through demonstration.
(5) Offsetting the forces of resistance (which sometimes show up belatedly).
(6) Cultivating (in the client) the perception of change as a continuing institution.

(*g*) To prepare the client for optimal termination of the change agent's role, the latter should:
(1) Train the client in problem-solving methodology.
(2) Arrange for some of his functions to be permanently incorporated in the client system.
(3) Arrange for periodic checkups to prevent recurrence of original problem.
(4) Train the client concerning when and how to seek further help.

7. The authors stress the need for a unified theory of change and changeability and for the establishment of priorities for research and experiment (for example, the effectiveness of different change agent techniques needs more precise evaluation).

8. Finally, the requirements for the training of change agents are delineated. Among the valid areas of specialization are: By type of client system; by diagnostic orientations and methods; by areas of change objects; by level of problem; by type of change method.

Comment by Reviewer

A basic document on the subject. Illuminated by a wealth of case material, it is of great value to anyone functioning in the change agent role.

ANALYSIS AND SUGGESTIONS

INDUSTRIAL INNOVATION

Little, Arthur D., Inc. *Patterns and problems of technical innovation in American industry.* Report to National Science Foundation, No. C-65344, 1963.

PURPOSE

This report explores the dominant patterns of innovation in mature* industries and the internal problems of technical innovation in such industries as a basis for proposing a series of suggestions for directed change in these industries.

METHOD

Five industries (textiles, machine tools, construction, appliances, and semiconductors) were historically analyzed to determine answers to questions such as: Where has significant innovation come from? How has it come about? What has been the timespan for adoption? What have been the problems about innovation and the obstacles to it? How do relationships among such areas as research and development, management, marketing, and production affect the innovation process?

The analytical procedures involved investigation of economic and product trends within each of the industries, analysis of published profit and technical reports of companies involved in all aspects of these industries, and some interviews. Several companies within each of the five industry areas provided the data for the study. The innovations studied were all of a technical nature and the basis for innovation was profit.

FINDINGS AND CONCLUSIONS

1. The companies studied revealed little growth or innovation and few technical innovations of major technical and economic significance.

2. Technical change from within is limited to slow, evolutionary improvement in products and processes.

3. Innovations occur in clusters. A major innovation requires change for its implementation which fosters further innovation.

4. Major innovations have come primarily from outside the traditional or mature industries. They have come from: Foreign technology, independent inventors, new small firms, and invasion of the traditional industries by technically advanced and established firms in other industries.

5. Innovation by invasion is the major source of technical change in mature industries. (Invasion occurs in three ways: The old borrows what it wants from the new, the new introduces change into the old, or the new displaces the old.)

6. The slow rate of innovation and change in mature industries is related to the fact that traditional industries are:

(*a*) Built on craft-based rather than science-based technology.

(*b*) Fragmented, in the sense of: (1) Encompassing a large number of companies too small to economically promote innovation; and (2) dividing the work of the industry into many small steps, each under the control of separate organizations.

(*c*) Focused on production and committed to present methods.

(*d*) Protected by powerful social systems (family, company, local community, etc.) which would be threatened by large-scale change and innovation.

(*e*) Notably lacking in entrepreneurship and entrepreneurial models.

7. Based on their analysis, the Arthur D. Little Co. offered the following suggestions for encouraging change in mature industries:

(*a*) If the goal is to encourage innovation in mature and traditional industries, supplying technical information will not be enough. Entrepreneurial problems which stand in the way of innovation must be resolved. Two possible avenues for overcoming entrepreneurial problems in traditional industries are: (1) Encouraging the formation of new businesses within the industry, and (2) industrywide consulting. A consulting firm could be developed within an industry by assembling, from the various companies, groups of individuals to work over long periods of time on shared problems of innovation; or the industries might develop a service much like the agricultural extension service.

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*Maturity is defined as those characteristics of tradition and stability which indicate that an industry has exhibited the tendency to level off in growth, rising only when the gross national product does.

(*b*) If the goal of change is the facilitation of invasion of the mature industries by other industries, industrial mobility can be promoted. Industrial mobility would reduce the cost of invasion to workers, companies, and industry locales. It more nearly is in the interest of rapid change than working on the entrepreneurial problems of traditional industries.

(*c*) There is a need for new forms of government/industry collaboration in which government acts neither as a monitor nor a crutch, but as a partner in technical change. Government can represent interests broader than those of an individual company, industry, group of workers, or area of the country.

Comment by Reviewer

This is a thorough study of mature industries and technical innovation. One must be cautious, however, in generalizing from industry to social service practice because of the many structural differences which exist. Moreover, the author's implication that larger, older institutions are less innovative and slower to change is not consistently supported by other studies of industrial change.

The suggestions most applicable to the field of mental health are: Create a change agent role; use consulting; encourage change and innovation with government aid.

KNOWLEDGE LINKER
ANALYSIS-DESCRIPTION

Lundberg, Craig C. Middlemen in science utilization: Some notes toward clarifying conversion roles. *American Behavioral Scientist*, February 1966, 9, 11–14.

PURPOSE

In converting scientific knowledge into practice several aspects need to be considered. In this article the author attempts to define and clarify different conversion roles.

METHOD

The author has drawn from his own knowledge and experience in developing this conceptualization.

FINDINGS AND CONCLUSIONS

1. Conversion roles may be placed along a continuum. At one end is science, which according to Lundberg is a combination of three factors: (*a*) A body of knowledge meeting "certain specific requirements;" (*b*) a method which meets "certain specific requirements in data gathering;" and (*c*) a group of values or norms prescribing "certain specific requirements" which the activities of persons must meet in order to be scientific. Nonscience (which includes the realms of practice or practical action) is at the other end of the continuum.

2. In distinguishing between scientist and practitioner, Lundberg describes the former as one who adheres to the notions stated above concerning science. The term practitioner refers to one who practices with an objective other than the accumulation of certified knowledge using empirical methods under certain value conditions.

3. The author characterizes and places several conversion roles on the science-practice continuum:

(*a*) The *technician* occupies a place on the continuum very close to a purely nonscientific role or practice end of the continuum. His competence is restricted and he may be only slightly familiar with the fund of basic knowledge underlying his specialization. An example of such an individual is the opinion pollster.

(*b*) The *professional* occupies the middle portion of the continuum and is basically a practitioner. "They attempt to utilize the knowledge and/or methods of science in the achievement of their service objections." Their methods are, however, not always wholly scientific and their goals are almost always other than the accumulation of knowledge.

(*c*) The *applied scientist* occupies a place toward the scientific end of the continuum. He is "concerned with the prediction and production of social and cultural change." He uses the scientific method but his objectives differ from the pure scientist in that they usually center around change in regard to a specific problem rather than around knowledge accumulation.

Comment by Reviewer

This provides further illumination concerning the divergent roles and goals of researcher and practioner.

RESEARCH UTILIZATION ANALYSIS

Mackie, R. R., and Christensen, P. R. *Translation and application of psychological research.* Technical report 716–1. Goleta, Calif.: Santa Barbara Research Park, Human Factors Research, Inc., 1967.

PURPOSE

The objectives of this study were: (1) To study communication processes between researcher and user; (2) to study characteristics of research studies and practices of researchers affecting application; and (3) to describe attitudes and practices of users that affect application.

METHOD

The procedures were: (1) Analysis of selected studies of human learning to define their possible practical applications for the Navy; (2) analysis of the impact of research findings on Navy training and the channels of the research findings were studied; (3) formulation of useful principles of learning to examine the problem of translating principles into application; (4) a study of information required by research translators in assessing the usefulness of principles derived from research for any specific purpose; and, (5) using the hypotheses developed in procedures (1) to (4), an examination of judgments and attitudes of psychologists renowned in learning and educational psychology with positions of responsibility for training research on issues vital to application of research results.

FINDINGS AND CONCLUSIONS

1. There is a limited impact of learning research on practical problems. Laboratory studies were often too narrow, too specific, too short in duration, reported in too much jargon.

2. Barriers to research utilization are:

(*a*) There is a need for learning engineers, a corps of professionals who can assess the meaning of research findings for innovation and application. The learning engineer will require specialized knowledge of the subject matter in training and research but he must remain a generalist rather than a specialist.

(*b*) There is a backward gap that now exists in communication channels; that is, from the training environment back to the research community. The proportion of research psychologists willing to get their hands dirty in this way is small.

(*c*) Users are generally incapable of formulating their problems in research terms.

(*d*) All of this will require some change in university departments which are not presently equipped to train people who are needed to fill this engineering change agent role.

3. The recommendations from this study, while generally applicable, are specifically directed toward mission-oriented agencies. The recommendations are:

(*a*) Agents sponsoring psychological research should require that the relevance of the proposed research to meaningful operational problems be established. The research proposal should be explicit on relevance and the scientist should take field trips to the operational site; particularly, research program directors should make periodic surveys to keep abreast of the specific operational problems.

(*b*) Researchers should be encouraged to employ conditions in their experiments that are similar, if not identical, to those encountered in the practical setting.

(*c*) Researchers should be encouraged to test hypotheses in the training or operational environment.

(*d*) In the event that the research is not done in the practical setting, research findings should be validated in the appropriate setting.

(*e*) In the interest of improving interpretation and dissemination of research, conferences should be held with psychologists and other research agents, and with agencies with personnel responsible for psychological abstracts and information storage and retrieval, to determine congruity and interest in requirements.

(*f*) In the interest of increasing the probability of research applications, sponsoring agencies (in this case, the Office of Naval Research) should arrange for consultation between the original investigator and those doing the validation study.

(*g*) Sponsoring agencies (in this case, the Office of Naval Research), should sponsor periodic symposia in a continuing effort for the development of more meaningful behavioral descriptions and to develop more meaningful task research.

(*h*) In the interest of facilitating communication and increasing user acceptance, particularly on learning, Office of Naval Research should sponsor a symposium with emphasis on the current utility of learning principles for educational technology. It should involve users as well as researchers.

(*i*) Simulation of a training curriculum for the learning engineer, a role previously discussed, is needed.

(*j*) In the interest of facilitating communication among researchers as well as practitioners, the required writing of research abstracts in a standardized format be accomplished. The required format would include the enumeration of all major features of the study, subject's task, dependent and independent variables, time factors, etc.

Comment by Reviewer

Hardheaded and very much to the point.

INNOVATION DIFFUSION
CONFERENCE REPORT

Manela, Roger. Notes on innovation diffusion. Unpublished summary of conference, Manpower Laboratory, Institute of Labor and Industrial Relations, University of Michigan, February 1969.

PURPOSE

The purpose of the conference which generated these notes was to gain as much information about theoretical and practical aspects of innovation diffusion as the participants could offer. The focus of the discussion was specifically the nature and purpose of the manpower laboratory.

METHOD

As far as can be inferred from the notes, the conference was a relatively freewheeling discussion involving a group of social scientists (principally from the manpower lab) concerned with innovation. Since many of the points reported deal with problems and procedures of the lab, no attempt is made herewith to summarize the full content; rather, those points have been abstracted which have broad application.

FINDINGS AND CONCLUSIONS

1. The suitability of an innovation depends on the level (in the receiving agency) at which it is to be applied; an administrative innovation might be credible and acceptable to administrators yet arouse little response in or have little effect on lower organizational levels.

2. The type of agency to select as the testing ground for an innovation raises a number of considerations:

(*a*) Action-oriented agencies often are involved in innovations they are not even aware of; they are so caught up in doing things that they fail to analyze their actions.

(*b*) Action-oriented agencies often have a high rate of staff turnover; this complicates the problems of evaluating the effects of innovation.

(*c*) If you choose those agencies which have a reputation as risk takers, you insulate yourself from the experience of encountering and coping with the resistances which the innovation will trigger in the more conservative agencies.

(*d*) There is a tendency to place the innovation with an agency which is a pacesetter on the assumption that its success there will cause it to spread to related agencies. Yet selecting the pacesetters is no easy task. Are they the old agencies * * * the sacred cows? Or are they the agencies with a past history of success?

3. Some units of an agency will be more amenable to change than others. Those units whose power is based on a status quo situation or who feel that change will increase their workload will resist change. Out-groups or units whose goals are oriented toward output rather than internal power relations tend to be prochange.

4. The way one gains entry to a user agency and the point of entry are crucial to the direction of change. A common model for gaining entry is the demand model in which: (*a*) there is a crisis-catalyzed appeal to the change agent; (*b*) all elements of the organization need not call on the change agent as long as; (*c*) those who do call on it have the power to do so even in the face of opposition; and (*d*) the crisis which prompted the demand for help enhances the credibility of the innovation. Other modes of entry: by fortuitous contact with the agency; by coercive power; by rational analysis of suitability of innovation to agency.

5. With respect to evaluation, the following relevant point was made: The range of variability between agencies makes it difficult to replicate any given test of the effectiveness of an innovation. Even within a single agency, operating conditions and operating personnel change so much over a period of time, that scientifically valid comparisons are hard to come by. In short, one's aspirations concerning evaluation should be realistic rather than rigorous.

Comment by Reviewer

This material is particularly relevant to change agents.

CHANGE
CASE STUDIES/SEMINAR

Mann, F. C., and Neff, F. W. *Managing major change in organizations.* Ann Arbor, Mich.: Foundation for Research on Human Behavior, 1961.

PURPOSE

The seminars upon which the publication is based were conducted for the purpose of reviewing current (spring of 1959) knowledge about change in organizational settings and to draw attention to the need for research about planned or directed change.

METHOD

Four case studies were presented of major organizational changes. Line executives and researchers involved in the cases reported their experiences and findings. Members of the seminar then joined to identify factors which had helped or hindered the change effort, and attempted to

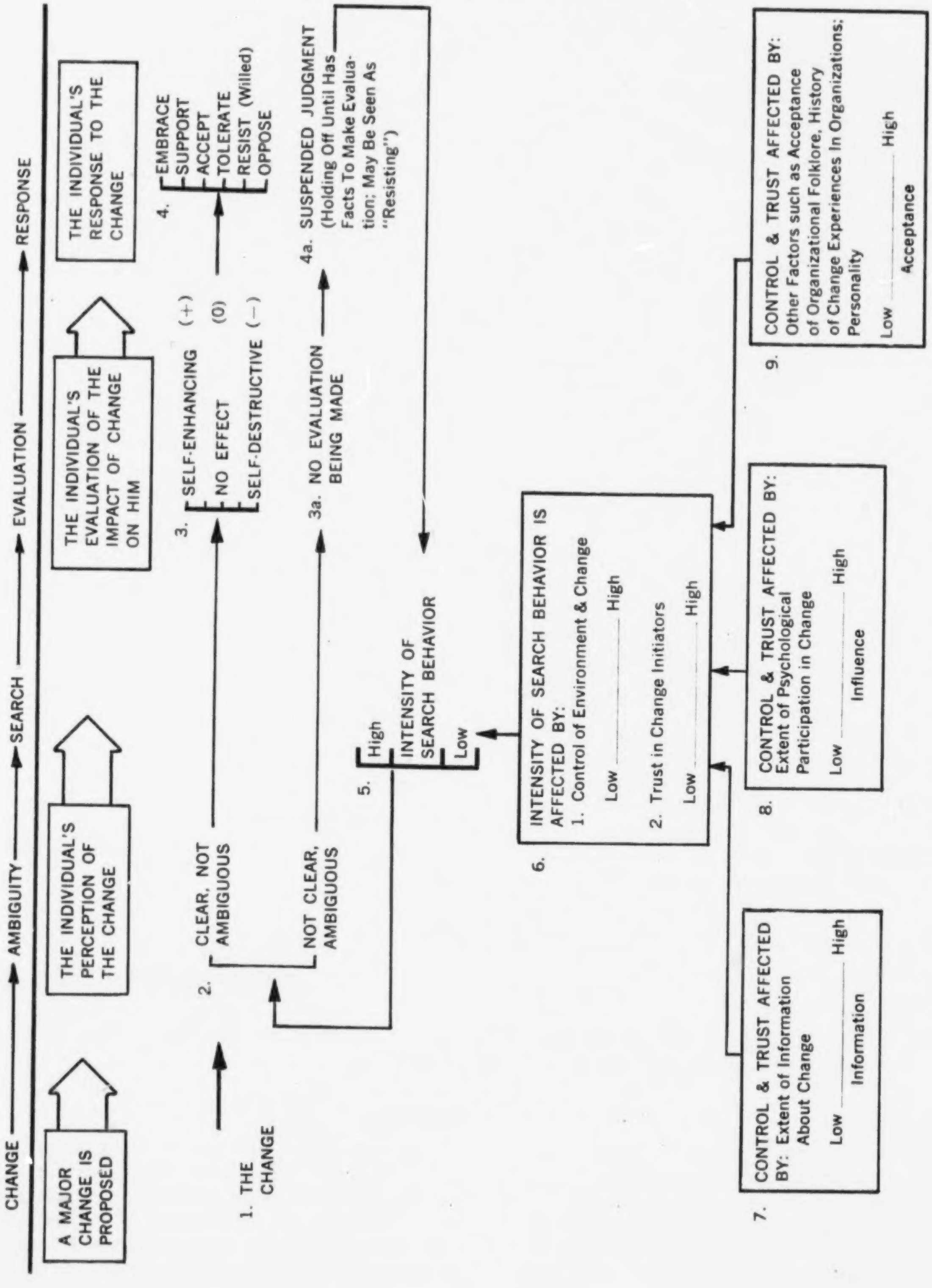
CHANGE
AMBIGUITY
SEARCH
EVALUATION
RESPONSE
A MAJOR CHANGE IS PROPOSED
THE INDIVIDUAL'S PERCEPTION OF THE CHANGE
THE INDIVIDUAL'S EVALUATION OF THE IMPACT OF CHANGE ON HIM
THE INDIVIDUAL'S RESPONSE TO THE CHANGE
1. THE CHANGE
2. CLEAR, NOT AMBIGUOUS
NOT CLEAR, AMBIGUOUS
3. SELF-ENHANCING (+)
NO EFFECT (0)
SELF-DESTRUCTIVE (−)
3a. NO EVALUATION BEING MADE
4. EMBRACE
SUPPORT
ACCEPT
TOLERATE
RESIST (Willed)
OPPOSE
4a. SUSPENDED JUDGMENT (Holding Off Until Has Facts To Make Evaluation; May Be Seen As "Resisting")
5. High
INTENSITY OF SEARCH BEHAVIOR
Low
6. INTENSITY OF SEARCH BEHAVIOR IS AFFECTED BY:
1. Control of Environment & Change
Low High
2. Trust in Change Initiators
Low High
7. CONTROL & TRUST AFFECTED BY: Extent of Information About Change
Low High
Information
8. CONTROL & TRUST AFFECTED BY: Extent of Psychological Participation in Change
Low High
Influence
9. CONTROL & TRUST AFFECTED BY: Other Factors such as Acceptance of Organizational Folklore, History of Change Experiences In Organizations; Personality
Low High
Acceptance

Figure 3.—Model for understanding an individual's response to change

(−) ← Management's Estimate of Impact of Change on Individual → (+)

(+) ↑ The Individual's Estimate of Impact of Change on Him ↓ (−)

	Estimates as incompatible with individual's personal goals	Don't know	Estimates as compatible with individual's personal goals
Estimates as Self-Enhancing (compatible with personal goals)	(A) When finding Support and Acceptance: Start scaling down expectations to realistic basis so that disillusionment is not destructive	(D) When finding Support and Embracement: Provide individuals with knowledge that course of change is not fully predictable	(G) When finding Embracement and Support: No problems except to maintain favorable definition of change
Don't Know	(B) When finding Resistance: Begin to review objectives and give information about the change to reduce ambiguity	(E) When finding Resistance: Provide full information about necessity for change as seen by management Share control in putting change into effect	(H) When finding Resistance: Increase information about change to reduce ambiguity
Estimates as Self-Destructive (incompatible with personal goals)	(C) When finding Opposition: Review change objectives Change objectives or Change personnel (Change would have to be made in period of power imbalance in favor of management)	(F) When finding Opposition: Provide full information Share control in putting change into effect	(I) When finding Opposition: — Increase information about change and its implications — Recognize that climate of trust is unfavorable — Identify and publicize how steps being taken are compatible with individual goals—distinguishing this change from others in the past

Figure 4.—Strategies for managing change

isolate points upon which they felt some tentative generalizations might be built.

FINDINGS AND CONCLUSIONS

1. The idea of a new role—that of change catalyst—evolved from the discussions. The change catalyst might be expected to do whatever staff functions were required to help the change agent accomplish his assignment. The change catalyst would be expected to hold himself apart from the direct management of the ongoing change so that he might better see the larger issues and problems of the strategy being followed in the implementation of the change.

2. Great importance was attached to the need for the key executive to fully understand the implications of the change for his operations or those of other executives in the organization. Thorough discussion of all ramifications of the change ("the controlled explosion") was urged. Such discussion would have as its objective tc bring out problems which would center attention, elicit greater involvement, and gradually bring greater understanding of changes the organization was embarked upon.

3. The change agent needs to understand and be able to use different types of power: Legitimate power (based on obligation or duty); reward power (ability to give or withhold reward); coercive power (potential for punishment); expert power (based on greater knowledge or abiliy); referent power (based on attraction and/or identification).

4. The findings with regard to understanding an individual's response to change are presented schematically in figure 3 of the report.

5. Strategies for managing change are summarized diagrammatically in figure 4.

Comment by Reviewer

Many of the generalizations which evolved from these seminars have since been elaborated on in more recent literature which has been summarized for purposes of this compendium. Accordingly, the focus in the foregoing summary is on: (*a*) Several ideas which do not occur elsewhere, and (*b*) two extremely lucid charts which are reproduced.

TECHNOLOGICAL INNOVATION RESEARCH

Mansfield, Edwin. *Industrial research and technological innovation: An econometric analysis.* New York: W. W. Norton, 1968.

PURPOSE

This book is devoted to industrial research and change as a result of technological innovations.

METHOD

The content of this book is based on the various research of the author and analysis of case studies.

FINDINGS AND CONCLUSIONS

1. *Size of Innovating Organizations.*

(*a*) Although it is often alleged that the largest firms do more than their share of innovating, it is not always the case.

(*b*) The largest organizations will do a disproportionately large share of the innovating in cases where—

(1) the investment required to innovate is large relative to the size of the organizations that could use the innovation;

(2) the minimum size of the organization required to use the innovation is large relative to the average size of similar organizations; and

(3) the average size of the largest organizations is much greater than the average size of all potential users of the innovation.

2. *The Timing of Innovation.*

(*a*) The available evidence indicates that the average lag between invention and innovations is about 10–15 years in industry.

(*b*) Mechanical innovations require the shortest interval, and electronic innovations require the longest.

(*c*) The lag seems shorter for consumer products than for industrial products, and shorter for innovations developed with government funds than for those developed with private funds.

3. *Innovation and Growth.*

(*a*) Successful innovators grew more rapidly during a 5- to 10-year period after the innovation occurred than other like organizations, their average growth rate often being more than twice that of the others.

(*b*) In the period after they introduced the innovations, the difference in growth rate between innovators and other comparable organizations was greater than before the introduction of the innovation. According to the author's estimates, the average effect of a successful innovation raised an organization's annual growth rate by 4–13 percentage points depending on the time interval and the industry.

(*c*) Successful innovation has a much greater impact on a small firm's growth rate than on that of a large firm.

4. *Rate of Diffusion of Innovations.*

(*a*) The diffusion of a major new technique is a fairly slow process. Measured from the date of first commercial application, it often took 20 years or more for all the major firms in an industry to install an innovation. Seldom did it take less than 10 years for diffusion.

(*b*) There seems to be a definite "bandwagon" or "contagion" effect. As the number of firms in an industry using an innovation increases, the probability of its adoption by a nonuser increases.

(*c*) As experience and information regarding an innovation accumulate, the risks associated with its introduction grow less and competitive pressures for adoption increase.

(*d*) The rate of diffusion tends to be higher for more profitable innovations and for those requiring relatively small investments.

5. *Characteritsics of Leaders and Followers.*

(*a*) The speed with which a particular organization begins using a new technique is directly related to the firm's size and the profitability of its investment in the technique.

(*b*) The personality attributes, interest, training, and other characteristics of top and middle management may play a very important role in determining how quickly a firm introduces an innovation.

(*c*) The author found that there are dangers in assuming, once a leader always a leader in introducing new techniques. According to these findings, there is a very good chance that a firm which is a leader in the adoption of one innovation may be relatively slow to introduce the next innovation when it comes along.

Comment by Reviewer

The book goes into greater depth on some of the same findings reported elsewhere by this author. Because of the many differences between industrial organizations and social service organization, care should be exercised in making generalizations from these findings.

Mansfield, Edwin. The speed of response of firms to new techniques. *Quarterly Journal of Economics*, 1963, 77, 290–311.

PURPOSE

In industry, new techniques spread from firm to firm through the process of imitation of successful innovations. The purpose of this research was to study this imitation process and identify the factors responsible for the speed of adoption; that is, to determine those factors related to why some firms begin using a technique long before others.

METHOD

Four propositions were tested:

(1) Other things being equal, the length of time a firm waits before using a new technique tends to be inversely related to the size of the firm.

(2) As the size of a firm increases, the length of time it waits tends to decrease at an increasing rate.

(3) Other factors being equal, the length of time a firm waits tends to be inversely related to the extent of the returns it obtains from the innovation.

(4) As the profitability of a firm's investment in the innovation increases, the length of time the firm waits decreases at an increasing rate.

Data were collected regarding the diffusion of 14 innovations in a total of 294 firms in the bituminous coal, iron and steel, brewing, and railroad industries. These data were fitted to a mathematical model designed to test the four propositions.

FINDINGS AND CONCLUSIONS

In general the findings supported the hypotheses being tested. Four implications based on the findings are suggested:

(1) The speed at which a firm responds to an investment opportunity is directly related to the profitability of the opportunity. That is, if the size of two firms is the same, and the innovation is considered more profitable for one firm than the other, the first firm will be quicker to introduce it.

(2) The findings represent a contradiction of the popularly held view that large firms follow the small ones and are slow to introduce innovations. If profitability is held constant, the chances are good that a large firm will be quicker to use a new technique than a small firm.

(3) A firm's financial health as measured by profitability, liquidity, and growth rate, bears no close relationship to how long it waits before introducing a new technique. The author suggests that, "The personality attributes, interests, training, and other characteristics of top and middle management may play a very important role in determining how quickly a firm introduces an innovation" (p. 311). Mansfield also suggests that the presence or absence of a few key advocates may be a crucial factor in the adoption of an innovation.

(4) It is dangerous to assume that certain firms are repeatedly the leaders or followers in introducing new techniques. A firm that is first in introducing one innovation is likely to be slow to introduce the next innovation.

Comment by Reviewer

The findings of this study in the field of economics seem broadly generalizable to mental health. To the extent that the dimension of "profitability" can be equated to that of "felt need" or "relative advantage," this study gives added insight into and weight to the importance of this variable.

ORGANIZATIONAL CLIMATE AND INNOVATION

SURVEY

Marcum, R. Laverne. *Organizational climate and the adoption of educational innovation.* Research Report for Office of Education, Contract No. OEG-4-7-078119-2901. Logan, Utah: Utah State University, March 1968.

PURPOSE

To identify the relationship of innovation adoption and characteristics of organizational climate.

METHOD

The initial step was to have the State department of education personnel from Oregon, Washington, Idaho, Nevada, and Utah help in selecting from each State 10 of the most innovative and 10 of the least innovative schools. An educational innovation checklist was then used to select from this sample 15 of the most innovative and 15 of the least innovative.

Details on the questionnaires used are as follows: The checklist of educational innovation has six main categories: Scheduling, staff utilization, procedures, organization, curriculum, and facilities. Within each of these categories a number of possible innovations are listed. Each one is to be indicated as having not been implemented, as having been less than 25 percent involved, as having been from 25 to 75 percent involved, as having been more than 75 percent involved. A total score is then calculated for each school, previous responses being scaled 0, 1, 2, and 3.

The "Organizational Climate Description" questionnaire was given to the staff of each school for the purpose of identifying open and closed climate schools. The questionnaire has a number of items concerning behavior of teachers and administrators at school. Each item is to be checked as: (1) Rarely occurs, (2) sometimes occurs, (3) often occurs, or (4) very frequently occurs. There are eight items of organizational climate, four characterizing teacher's behavior and four characterizing principal's behavior. On the teacher's side, disengagement refers to the teacher's tendency just to be going through the motions. Hindrance refers to the teacher's feelings that the principal burdens them with busy work. Esprit refers to the teacher's morale. Intimacy refers to the teacher's enjoyment of friendly social relations with his or her peers. On the principal's side, aloofness refers to behavior by which the principal is characterized as formal and impersonal. Production emphasis refers to straw boss "supervision" by the principal. Thrust refers to behavior in which the principal is trying to move the organization. Consideration refers to behavior in which the principal tries to treat the teachers humanly.

FINDINGS AND CONCLUSIONS

1. In an open climate there is high esprit, low disengagement, low hindrance, friendly relations but not particularly high intimacy. In this situation, the principal's behavior shows high thrust, high consideration, he is not aloof and does not have to emphasize production.

2. In the closed climate the opposite situation prevails; about all that seems to keep the teachers in the school is that they get satisfaction from their relationships with one another.

3. Statistical comparisons were made on a number of variables by means of the analysis of variance. The findings were as follows:

(*a*) Schools involved in innovation showed more open climates.

(*b*) Expenditures per student were higher in the most innovative schools.

(*c*) The professional staff was younger in the more innovative schools.

(*d*) Educators remained fewer numbers of years in the schools involved in innovative practices.

(*e*) The most innovative schools showed the larger number of professional staff.

(*f*) Administrators viewed the climate as more open as did the teachers in the more innovative schools.

Comment by Reviewer

This is one of the few even quasi-experimental studies of organizational factors related to innovations. Its generalizability is questionable, but it suggests hypotheses to be tested.

RESISTANCE TO CHANGE

ANALYSIS

Marmor, J., Bernard, V., and Ottenberg, P. Psychodynamics of group opposition to health programs. *American Journal of Orthopsychiatry*, 1960, 30, 330–345.

PURPOSE

Health programs generally derive from scientific progress and recommendations. Despite this fact, it is not unusual for such programs to meet with intense and determined opposition on the part of various pressure groups. In this article the authors attempt to isolate the kinds of factors producing resistance to change.

METHOD

The authors focus on the various rational and irrational types of organized opposition typically aroused when a health innovation is advocated for community adoption. They draw on several examples such as the introduction of fluoride as they identify resistance factors.

FINDINGS AND CONCLUSIONS

1. The authors feel that changes which are allowed to take place spontaneously are less likely to arouse organized resistance.

2. When efforts are directed to promoting the adoption of health innovations, more resistance is also likely to develop.

3. The greater the promotion effort, the greater the opposition.

4. The resistance factors identified by the authors are neatly summarized in the following paragraph:

> Opposition to social change derives from factors which are external to the individual as well as internal within his psyche. Some of the external factors involved include threats to power, prestige, or economic security * * * , the factor of coercion, problems of timing, the attitudes of leadership, and various educational, socioeconomic, and cultural factors. The internal factors involved appear to be centered on feelings of vulnerability in relation to the sense of bodily wholeness of the individual's life space.

5. In conclusion the authors stress the importance of the leadership role in both promoting and resisting change.

Comment by Reviewer

Although this article is directed toward acceptance of community health programs, it highlights the danger of the development of organized resistance when there is an organized effort for change. The factors identified by these authors seem consistent with findings from more empirical research and are likely to be found in mental health practitioners.

TECHNICAL COMMUNICATION

ANALYSIS

Marquis, D. G., and Allen, T. J. Communication patterns in applied technology. *American Psychologist*, 1966, 21, 1052–1060.

PURPOSE

Pointing out that "pure scientists" or researchers (fundamental) are only secondarily, if at all, concerned with practical utilization of their products, the authors of this article turn to investigate how individuals working in applied research, exploratory development, etc., secure and exchange information. They then compare the nature of the communication process in science and technology.

METHOD

The authors draw on the findings of completed research studies as a basis for their analysis. They, in essence, review and summarize the existing literature on the information sources of scientists and technologists.

FINDINGS AND CONCLUSIONS

1. Scientists make much heavier use of literature and colleagues outside their organization than do technologists.

2. The customer and the vendor are two sources of information used by technologists that remain unused by the scientists. This results primarily from the fact that technologists are usually more directly involved in the marketplace.

3. Although technologists have journals, this body of literature lacks the characteristics of scientific literature. Citations to previous papers are fewer and are often to the author's own work.

4. There is less preoccupation with publication among technologists.

5. Scientists keep track of one another's work through visits, seminars, and small invitational conferences, supplemented by informal exchanges of written material long before it reaches archival publication. Technologists keep abreast of current developments related to their work primarily through close association with coworkers in their own organization.

6. Industrial and government laboratories with strong mission orientation and bureaucratic administrative structures usually cut themselves off from interaction beyond the organizational perimeter.

7. Technological literature is much less important than scientific literature. The unpublished reports are by far the most widely used of all written channels. The professionally produced journals are often useless, published for profit, and supported in whole or in major part by the sale of advertising space.

8. There is little evidence of direct communication links between science and technology. There does exist a "gap filling" science (differentiated from frontier science) that does appear to be more directly responsive to technological need.

Comment by Reviewer

The gap and differences between science and technology described in this article might be generalized to the gap and differences between research and practitioner.

ORGANIZATIONAL CHANGE

CASE STUDY

Marrow, A. J., and French, J. R. P., Jr. Changing a stereotype in industry. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 583–586.

PURPOSE

The project being reported had as its purpose the modification of a bias against the employment of older (post-30) women in a garment factory; the modification was motivated by a tight labor supply.

METHOD

The change in attitude was effected under the guidance of a staff psychologist. It was determined that management was adamant in its conviction that older women employees were less productive than the younger ones, took longer to learn a new skill, had a higher rate of absenteeism and a higher rate of turnover. A top management group became involved in designing and carrying out a modest research project to test the validity of these strongly held preconceived notions. The research demonstrated (see below) that older women were desirable employees in terms of criteria management itself had selected. At this point management was convinced, but supervisory employees still resisted the change. A process of reeducation was carried out in the plant. Subleaders took part in group discussions, exploring the motivation for the bias and developing insights concerning it. Eventually the group arrived at a decision recommending that an experiment be made in the training of older workers—a decision which management supported because of its own factfinding activities.

FINDINGS AND CONCLUSIONS

1. The stereotype had no foundation in fact: The gathering and analysis of data indicated that older women not only equalled but surpassed the younger women in productivity; were able to learn skills slightly more rapidly; had a slight superiority in their attendance record; and a striking superiority in the turnover rate.

2. The stereotype survived among the supervisory level despite prestige suggestions by an experienced psychologist, by the personnel manager, by the plant manager, by the president of the company, and a combination of these.

3. Group discussion and decision brought about change among supervisors, as participation in research brought about change among management.

4. Facts are useful only when the stereotype bearer himself is reoriented in his search for a new solution.

5. Through a process of guided experiences which are equally his own, a person may reorient himself so that he gradually takes on within himself the attitudes which he would not accept from others.

Comment by Reviewer

This study underscores the importance of involving agency staff in discussion of proposed change. It is of relevance to mental health agencies, since adoption of innovation in this field is likely to impinge upon existing attitudes and values of staff.

DISSEMINATION

SURVEY

Matheson, N. W., and Sundland, D. M. Objectives of the FDI system for mental hospital personnel in Missouri. Paper presented at the Third International Congress of Medical Librarianship, Amsterdam, May 1969.

PURPOSE

This paper describes the results of an effort to identify user group variables in mental hospitals and measure the impact of different kinds of disseminated information.

METHOD

A questionnaire concerning sources of information was sent to 300 people, 209 were returned. Following this, an effort was made to develop a new information system (FDI).

FINDINGS AND CONCLUSIONS

1. In answer to a question concerning sources of information preferred after one's own library resources have been exhausted, the most popular choice was the university library, with friends ranking second. The next most was public library and trailing were NCMHR and NLM.

2. New book information came primarily from book reviews, friends, and publishers' notices.

3. Only 32 percent of respondents felt their institutional libraries were adequate, so new information sources were desired.

4. Although dissatisfaction with current libraries was evident, responders did not see much of the journal literature and were vague about their informational interests. They depended greatly on interpersonal exchange of information.

5. In developing a new informational system, group meetings were held at each institution; participants contacted one another by telephone, thus making use of their dependence on interpersonal contact. These methods proved to be fairly satisfactory and cooperation in these initial steps was a prerequisite of participation. The clinicians, who were the main mental health professionals in this study, tended not to use many

resources, partly because their experiences with the literature showed little prospect of reward for the energy necessary to the search and secondly because of the common complaint that the researcher lacks interest in the practical applications of his work, so that the reporting literature does not make clear the clinical applicability of the research. As a consequence, many of the institutions in Missouri have essentially no libraries. They "consisted literally of books of such insufficient interest as not to be stolen."

6. "Significance in developing a behavioral science information network in Missouri lay in determining what effect, if any, the confluence of the right person with the right information has; whether, indeed, placing research results on the mental health worker's desk under his nose would have any impact." Information in the behavioral sciences is rarely a life and death matter; still, vast sums are invested in mental health research, the results of which too infrequently reach the clinicians and administrators who might apply them.

7. FDI, the system developed, is designed to supplement existing information gathering systems and to Xerox from the journals and mail information to users. "This system is a personalized service which directs to each individual only notification of articles, abstracts, and book reviews that have been coded for terms which fit into his individual subject profile interest. This is a pioneering project in the mental health field bearing some similarity to attempts in other disciplines."

8. The most usual response subjects made to how FDI had been of benefit was the amount of time conserved. FDI has also made an unexpected contribution to staff development. "Many of those in FDI pass on references and reprints to their colleagues who are not enrolled. This kind of feeding in of research findings at all levels of practice *hopefully* will stimulate a vigorous new growth in utilization of research in all areas of practice."

Comment by Reviewer

This project concentrates on a frequently neglected phase of the research utilization project: dissemination. The project is ongoing and should be followed.

CHANGE MODELS
THEORY

McClelland, W. A. The process of effecting change. Presidential address to the Division of Military Psychology, American Psychological Association, September 1968.

PURPOSE

Dr. McClelland is president of the Division of Military Psychology of the American Psychological Association. He has been involved in research and development in military psychology for 21 years and is currently working with the Human Resources Research Office at George Washington University. His purpose is to suggest ways of moving from research to development to application and use.

METHOD

He reviews the literature that is relevant to the points he wants to make and draws on his experience to make a model of the means of getting research applied in practical situations.

FINDINGS AND CONCLUSIONS

1. The historical record indicates that the findings of research are not quickly utilized. It took about 50 years for complete diffusion of such practical invention as the kindergarten to take place. HumRRO's experience with the Army utilization of R & D indicates the range of time from completion of research to implementation ranges from a few weeks to over 10 years.

2. There are three fallacies concerning the utilization of research that Dr. McClelland does not believe are justified:

(*a*) A good product will succeed on its own merits. He points out that reports are often filed away and forgotten or are ignored in some other way.

(*b*) No further attention is required once an innovation is introduced (obviously a plan for maintenance and feedback is necessary).

(*c*) There is an orderly process from research to development to use (actually there is a great deal of crossing back and forth among research, development, and use).

3. There is a large gap between theory and practice in education due to: Diffuse goals, lack of knowledge on how to engineer innovations, the lack of evaluation and feedback, management, and funding problems, and finally, attitudes of suspicion and fear on the part of educators.

4. A review of the literature led to the following "characteristics of innovators": (*a*) They "get around" outside of their normal environment; (*b*) they tend to be younger; (*c*) they are familiar with research, development, and use activities; (*d*) organizations or individuals who are more affluent tend to be earlier adopters; (*e*) there is little literature on the personal attributes of successful innovators except that he is not the most comfortable person to have around which may be partially due to people's general resistance to change.

5. Guba's (1968) paper on the means of implementing change was discussed and the idea that the client is rational and will follow logical evidence was criticized for being "a bit naive."

6. There is no best way to manage change in complex enterprises.

7. A list of criteria for evaluating change models was given in terms of provisions for the following factors:

(*a*) Mutual recognition of the change agent and client system roles.

(*b*) Means of affecting the direction, temper, and quality of change.

(*c*) Evaluation of cost effectiveness.

(*d*) Diagnosis of strengths and weaknesses.

(*e*) Definition of the time required for a continuing relationship.

(*f*) The model can be communicated realistically without distortion.

(*g*) Criteria for assessing when the model is applicable and when it is not.

(*h*) Usefulness to people with different backgrounds.

(*i*) Means for detecting gaps in theory and practice.

8. Two premodels of change were suggested:

(*a*) *The interpersonal paradigm.*—This is based on an adaptation of a more general model of Rogers (1968) which has three general stages: Antecedents, process, and results. Under antecedents McClelland lists change-agent characteristics, client's characteristics, and perception of the situation, and change agent's perception of the situation. Under process he places information sources such as awareness, interest, evaluation, trial, and decision. He also includes the perceived characteristics of the innovation (advantages, compatibility, complexity, and divisibility) under the process heading. The results section includes such features as client feedback, and factors leading to continued adoption or continued nonadoption.

(*b*) *The interorganizational paradigm.*—This follows the concept of research through development to use often used by military psychologists. The paradigm has three broad sections: Requirements for research (including such factors as the characteristics and requirements of the client system and the characteristics of the R. & D. agency), the conduct of R. & D. (including research, report writing, and mutual determination of action implications) and finally the decision process based upon the research findings. This paradigm is based on the assumption that extensive, meaningful documentation is required. This model is basically an elaboration of the one HumRRO has evolved over a period of working with the Army for 17 years.

Comment by Reviewer

This paper organizes and expands on the literature in a useful way. The premodels of change and the criteria for evaluating models gives a clearer understanding of the elements which are necessary in order to effectively bring about planned changes.

INFORMATION FLOW SYNTHESIS

Menzel, Herbert A. Scientific communication: Five themes from social science research. *American Psychologist*, 1966, 21, 999–1004.

PURPOSE

From research done during the past 20 years Menzel identifies five themes which describe the flow of information from researchers to potential users.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. *Acts of Scientific Communication Constitute a System.*—It is necessary to look upon any one arrangement, institution, facility as a component of the total system which includes all the provisions, all the facilities, all the occasions and arrangements, and all the customs in the discipline that determine the transmission of research information.

2. *Several Channels May Act Synergistically To Bring About the Effective Transmission of a Message.*—Different communication channels are linked together in the system. "Information must often be publicized repeatedly or through diverse channels before it will enter the stream of communications which will lead to its ultimate user; and from the point of view of the consumer of information, it is frequently necessary to be exposed to the information repeatedly before it will make an impact (Menzel, 1958, pp. 14–17, 32–49, 92–124)."

3. *Informal and Unplanned Communication Plays a Crucial Role in the Science Information System.*—Menzel cites much empirical evidence for this generalization. The informal flow of information is usually regular. Certain individuals tend to be the most frequent carriers and there is often regularity in kinds of occasions, places, and times at which these information exchanges occur—i.e., labs, corridors, during coffee breaks, at conferences, etc.

"Information that helps interpret results and information that helps a person become acquainted with a new field also seem to make their way differentially, often through interpersonal channels (APA, 1965, report No. 11; Menzel, 1959, Resembloom, McLaughlin, and Welek, 1965)."

4. *Scientists Constitute Publics.*—The populations served by the science information system, that is, scientific researchers, and practitioners in various disciplines and professions can be usefully looked upon as publics. These publics in turn can be characterized by their communication behavior and information transmission planned accordingly.

5. *Science Information Systems Serve Multiple Functions.*—The functions include: The exhaustive search; the reference function, current awareness function, a function which consists of stimulating researchers from time to time to seek information outside of their designed areas of attention; and a function which consists of enabling a scientist to follow through in this stimulation by "brushing up" or familiarizing himself with a well-defined field of inquiry which he had not previously included in his attention area.

Comment by Reviewer

Menzel makes several points which are important if research findings are ever to move into practical use. Several channels should be utilized. Too often one channel is used to the exclusion of all others, that is the print media. This is also probably the least frequently utilized by practitioners. Research input needs to be put into the information flow that circulates through the interpersonal communication systems in the mental health field. One way of encouraging more communication of this type is to give mental health practitioners the opportunity to interact at conferences, etc., devoted to the communication of relevant research findings.

COMMUNITY COOPERATION IN RESEARCH
CASE STUDY

Mercer, J. R., Dingman, H. F., and Tarjan, G. Involvement, feedback, and mutuality: Principles for conducting mental health research in the community. *American Journal of Psychiatry*, 1964, 121(3), 228–237.

PURPOSE

To give an account of the principles and techniques employed to cope with the problem of project-community relationships by a research project studying mental retardation, an area closely related to mental health. The procedures are credited with the successful conclusion of the fieldwork.

METHOD

The research project was an intensive epidemiological study of a medium-sized urban community in southern California for the purpose of identifying mentally retarded persons in the community.

Four aspects of the research plan were anticipated to create special problems in maintaining harmonious relations with the community:

(*a*) *Saturation sample.*—Because of the need to include all cases in the sample and the distribution of cases throughout all segments of the community, inevitably there was the nearly total involvement of the city in the study. The recognized procedure of entering a community with little advance notice, negotiating individually for each interview, and leaving quietly could not be followed.

(*b*) *Nature of the research problem.*—The study had to be presented to the community in a manner which would secure cooperation of respondents in a study which could be perceived as potentially damaging to their own self-esteem.

(*c*) *Intelligence testing of a subsample.*—One-sixth of the sample required additional contacts and additional cooperation.

(*d*) *Longitundinal design.*—Plans for additional study meant that the active cooperation of the community was essential.

FINDINGS AND CONCLUSIONS

The study was guided by a "philosophy" consisting of three fundamental principles:

1. *Involvement.*—Those persons in the community power structure holding key positions in relation to the mentally retarded (the project subject/sample) should be involved from the beginning as consultants or staff.

(*a*) This particular study involved: The Director of Pupil Personnel Services and the Director of Special Education (both appointed by the Superintendent of city schools); the Chief County Probation Officer and his Deputy in charge of court commitments; the Director of Psychological Services for county schools; a high administrative officer of the local branch of a State university; and, two members of the staff of the sociology department.

(*b*) The value of having these persons involved in the project was proven repeatedly. For example, the initial skepticism of the local newspaper publisher toward the project was dispelled after discussion with the university official. The key officials also helped in interpreting to other city officials and in legitimizing project activities with the citizenry.

2. *Feedback.*—Through continuous contact with the project provided by regular meetings of the advisory group, community leaders were constantly informed of the current problems being faced by the research staff. The advisory group was made up of the consultants from community social agencies and prominent social scientists.

(*a*) The continuous information chain enabled community leaders to utilize the information feedback advantageously in their own work and assured them of a priority of knowledge.

(*b*) Cognizance of project problems often resulted in valuable assistance from community leaders. For example, the consultants from the schools suggested using teachers as interviewers during summer vacation and were instrumental in recruiting what proved to be an efficient and devoted corps of workers.

3. *Mutuality.*—Whenever possible, plans were formulated so that the research effort would not only advance specific project interests but would prove useful to participating agencies. This particularly applied to the kinds of data collected.

Also, whenever feasible, agency records were analyzed by agency staff members employed by the project. Staff members interested in research in project related topics were encouraged and assisted in generating and analyzing data.

4. Based on experience with this community research effort, several suggestions are made for the conduct of such a study:

(*a*) Pretesting field procedures in a different community from that utilized for the final study provided valuable information for the final fieldwork.

(*b*) Establishing contact with significant community agencies in advance of the fieldwork, judicious use of newspaper publicity, and the projecting of a project image acceptable to the community were found to be useful in developing favorable community-project relations.

(*c*) Careful timing of fieldwork, recognition of ethnic factors in selecting and assigning interviewers, and dealing continuously with problems of staff morale were also involved in achieving a 90.96-percent completion rate for the initial screening interview and an 86.6-percent rate for subsample testing.

Comment by Reviewer

The principles used in this study for the purpose of securing good relations with the community would also seem to apply to the objective of research utilization. One very valuable aspect of this article is the specific examples it provides in addition to outlining the general principles.

INNOVATION
ANALYSIS

Miles, Matthew B. Innovation in education: Some generalizations. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 631–662.

PURPOSE

As the final chapter of the above book, this paper reviews generalizations made explicitly or implicitly in preceding chapters.

METHOD

The author has synthesized the points relevant to innovation made throughout the book.

FINDINGS AND CONCLUSIONS

1. Although the merits of the innovation itself are rarely the major determinants with respect to adoption, some of the properties of the innovation do have a bearing on adoption.

(*a*) Innovations requiring inordinate outlays of money, energy, or time by the adopting person or group are likely to move slowly.

(*b*) Technological innovations are relatively easy to adopt; such innovations are equally easy to reject or discontinue.

(*c*) Supporting materials (teaching aids, manuals, etc.) aid the diffusion of educational innovation.

(*d*) Innovations with built-in implementation supports (such as special training for practitioner) diffuse more rapidly than those not so supported.

(*e*) Innovations must be congruent with the potentially adopting system. Those which are perceived as threats to existing practice are less likely to be accepted; those which can be added to an existing program without seriously disturbing other parts of it are likely to be adopted.

2. Most innovations appear to be stimulated, triggered, and nurtured by some active person or group, either external to the innovation-receiving system or within that system. The following generalizations are made about the characteristics of these innovators.

(*a*) The innovator is not an isolated hero. He must recognize and accommodate to his interdependence with others (coworkers, the institution, the external community, etc.).

(*b*) The innovative person tends to be in a position of authority within the system. They are often strong, intelligent, enthusiastic, creative, and skilled in interpersonal relationships. It is, however, not uncommon for innovators to be rebellious, impractical, or emotionally unstable.

(*c*) Innovations sponsored by a group rather than an individual are more likely to be moderate rather than radical in nature.

(*d*) Group acceptance and implementation of an innovation is facilitated through the creation of a temporary system.

3. The following characteristics of the target system are relevant to the acceptance or rejection of innovation.

(*a*) Generally speaking, within any given system, there are more forces working for stability than for change.

(*b*) Zeitgeist affects change; the author believes that there are many features in American society that presently support innovation.

(*c*) Internal conditions conducive to the acceptance of change include the need to accommodate to growth, discrepancy between ideals and existing practice, conflict among subsystems.

(*d*) Innovativeness varies directly with available money.

4. The process of implementing change needs careful study, planning, and experimental work.

(*a*) Among the strategies which aid in effective implementation are: Comprehensive attention to all stages of the diffusion process; creation of new structures, especially by systems outside the target system; congruence with prevalent ideology in the target system; reduction of pressures on relevant dicisionmakers; use of linkage between existing structures or between old and new structures.

(*b*) Different formulations are offered concerning the stages of the change process.

(1) One formulation identifies the following stages: Development of awareness and interest concerning the innovation; reaching a judgmental decision about the potential rewards and costs of the innovation; actual trial of the innovation within the system; decision to adopt, adapt, or reject.

(2) Another formulation includes these stages: Criticism of existing programs; presentation of proposed changes; review and reformulation of proposals and comparison of alternate proposals; action decisions; implementation of action decisions.

(*c*) The following optimal conditions are identified in relation to the stages of the change process.

(1) Effective design of innovation requires a protected, enriched, autonomous environment.

(2) In the development of awareness/interest, credibility is crucial. It can be aided if a genuinely dispassionate group serves as a clearinghouse for information on an incipient innovation.

(3) Making an evaluative judgment is easier when potential adopters can visit and actually observe the operation of innovations.

(4) During the initial period of an innovation's use, the user needs generous support and help.

(*d*) Adequate linkage between innovating groups and target systems can be facilitated if innovators are chosen so as to have a direct, preexisting relationship with persons responsible for making political or financial decisions relevant to the innovation. Reasonably stable tenure in the innovating group is also helpful.

5. Many innovations, once accepted, are continued without valid and dispassionate evaluation concerning effectiveness; likewise many innovations have a short life and are abandoned without rational evaluation. The fate of innovations—and the underlying reasons for the fate—needs further exploration.

Comment by Reviewer

A number of individual chapters of this book have been separately summarized for this compendium. This final chapter represents a convenient and compact "wrapup."

CHANGE
ANALYSIS

Miles, Matthew B. Planned change and organizational health: Figure and ground. In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced Study of Education Administration, University of Oregon, 1965, pp. 11–34.

PURPOSE

It is the author's conviction that those concerned with innovation have tended to focus primarily on the efficacy of the innovation itself and to neglect the readiness of a specific organization to absorb the innovation. Accordingly, his purpose in this paper is to correct that deficit and to pinpoint factors of organizational health in relation to utilization of innovation.

METHOD

The paper was developed by analytical consideration of the issues with considerable use of published materials by other specialists in the field of planned change.

FINDINGS AND CONCLUSIONS

1. The author formulates the following dimensions of organizational health:

(*a*) In a healthy organization, the *goals* of the system are reasonably clear to the system members and reasonably well accepted by them. The goals must also be achievable with existing or available resources, and must be appropriate.

(*b*) There should be relatively distortion-free *communication*, vertically, horizontally, and across the boundary of the system to and from the surrounding environment.

(*c*) The distribution of *influence* should be relatively equitable. Subordinates can influence upward, and intergroup struggles for power are not bitter.

(*d*) When there is orginaztion health, the syster's *resources*—particularly its personnel—are used effectively. People may work hard, but they do not feel that they are working against themselves or against the organization.

(*e*) A healthy organization has *cohesiveness.* Its members are attracted to it, want to stay with it, be influenced by it, and collaboratively exert their own influence.

(*f*) A healthy organization is *innovative.* It tends to develop new procedures, move toward new goals, produce new kinds of products, diversify itself, and become more rather than less differentiated over time.

(*g*) A healthy organization has *autonomy.* It does not respond passively to demands from the outside nor does it respond destructively or rebelliously to perceived demands. It has a sense of independence from the environment.

(*h*) A healthy organization has sufficient capacity for *adaptation* so that, when environmental demands and organization resources do not match, a problem-solving, restructuring approach evolves in which both the environment and the organization undergo change. The organization, if it is healthy, has enough stability and stress tolerance to manage the difficulties which occur during the adaptation process.

(*i*) A healthy organization has *problem-solving adequacy.* This encompasses well-developed structures and procedures for sensing the existence of problems, for inventing possible solutions, for deciding on the solutions, for implementing them, and for evaluating their effectiveness.

2. Educational organizations have certain special properties which tend to diminish their organizational effectiveness. These include goal ambiguity, input variability (that is, they must accept a wide range of pupils), role performance invisibility, low interdependence, vulnerability, lay-professional control problems, and low-technological investment.

3. Specific interventions are suggested to improve organizational health.

(*a*) *Team training.*—Members of an intact work group meet for a period of days away from their offices, with constant help, to improve their effectiveness as a problem-solving team.

(*b*) *Survey feedback.*—Attitudes, opinions, and beliefs of members of an organization are collected by survey, findings are provided members of the group who examine them and plan changes accordingly.

(*c*) *Role workshop.*—All people in a particular role within an organization meet to examine role expectations others hold for them, the fit between their own wishes and these expectations, their actual role performance, etc.

(*d*) *Target setting and supporting activities.*—Periodic meetings are held between supervisor and each of his subordinates separately to set targets for work and personal development. Targets are reviewed from time to time. Activities directed toward achievement of goals (conferences, workshops, academic courses, etc.) are provided.

(*e*) *Organizational diagnosis and problem solving.*—This can be accomplished by residential meetings of top members of a work group to identify problems and develop solutions. Emphasis is less on interpersonal effectiveness than on system-wide problems.

4. The foregoing means of intervention have these common principles: Self-study, relational emphasis, increased data flow, norms which function as a change agent, temporary system approach, and expert facilitation.

Comment by Reviewer

Except for the specific characteristics of educational organizations, this material is relevant to virtually any organization confronting the problems of change.

CHANGE
ANALYSIS

Miles, Matthew B. On temporary systems. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 437–490.

PURPOSE

The focus of this paper is the use of temporary systems to bring about change in persons, groups, and organizations.

METHOD

The author draws upon case material, but the method is primarily analytical.

FINDINGS AND CONCLUSIONS

1. Permanent systems find it difficult to accomplish change. Their energies are devoted primarily to carrying out routine goal-directed activities and to maintaining existing relationships within the system. Other antichange forces (defective communication, status consideration, etc.) also serve to block the introduction of change.

2. Temporary systems (such as the psychotherapeutic relationship, the religious retreat, goal-directed workshops and conferences, the pilot project, and the consultant-client relationship) prove to be effective mechanisms for inducing change.

3. Change-inducing temporary systems can be functionally differentiated as follows: Treatment, reeducation, and education.

4. Temporary systems have the following *input* characteristics—that is, characteristics which appear at the time of setting up the system:

(*a*) They are expected by the participants to terminate at a specified point in time or when some specific event has occurred (such as: a problem solved, a report finished).

(*b*) The initial goal is clearly defined and limited. Members do not anxiously confront a limitless and unachievable task.

(*c*) There is usually close specification of the classes of personnel who may enter the system for its limited life. This often reduces internal conflict and bypasses problems of status maintenance.

(*d*) Participants are usually separated—socially and physically—from their ordinary pursuits. A cultural island facilitates contemplation of change and provides some protection to participants.

(*e*) Generally speaking, the temporary system will more readily accomplish its goals if it is small in size and if it is housed in a physically limited territory (one hotel, a single meeting room).

5. Temporary systems have the following *process* characteristics:

(*a*) They provide participants of coherent, narrowed time perspective. Postponement of activity is discouraged. Use of directed energy is increased. The use of time is so concentrated that there is often a distorted perception of elapsed time.

(*b*) Goals are redefined as new understandings develop and communications improve. This reformulation of goals as a group process serves to fully engage the participants in the world of the temporary system.

(*c*) There is precise specification of the "rules of the game." This serves to make the system controllable, predictable, and compelling (that is, participants will perform unusual or difficult tasks because they are part of the given procedures).

(*d*) The participant is freed from his usual role conflicts and has the opportunity for role redefinition and refashioning of his identity. He has the opportunity for risk-free experimentation with new roles.

(*e*) Temporary systems encourage a special form of communications: A common language with special meanings for the participants tends to develop; new channels of information transmission open up between persons whose roles in former permanent systems kept them apart; there is a tendency, as they share more information with each other, for participants to become more open and trusting.

(*f*) The temporary system has its own power system. Productive work does not get underway until the power structure is clear to all. There is a tendency for equalitarian notions of power distribution to develop. The net influence of any one individual on the system can be substantial.

(*g*) Characteristic states of feeling during the process include an early defensiveness, an emerging atmosphere of play, a developing interpersonal liking and acceptance, an esprit de corps, and finally a deep sense of involvement.

(*h*) It is relatively easy to develop new norms in a temporary system; they can become internalized as attitudes in the person are carried over as practices into permanent organizations. Among the typical norms generated by temporary systems: Equalitarianism, authenticity, inquiry, hypotheticality, "newism," effortfulness.

6. Temporary systems have the following *output* characteristics:

(*a*) There can be changes in the durable, continuing aspects of individual's attitudes, knowledge, or behavior.

(*b*) Membership in a temporary system can durably alter the quality of preexisting relationships among members of the system.

(*c*) Action decisions can emerge from temporary systems.

7. The author makes the point that despite the suitability of temporary systems in the accomplishing of change, they do have certain characteristic problems.

(*a*) Participants may be overloaded, overstimulated, emerge with the feeling that they need decompression time.

(*b*) The system may aspire toward grandiose, unattainable goals.

(*c*) The intensive climate calls for demanding process skills which are not always provided.

(*d*) The short-term isolation from the surrounding environment may generate long-term alienation when members return to the permanent system.

(*e*) Failure of linkage between temporary and permanent systems can short circuit the accomplishments of the former.

Comment by Reviewer

This is a cogent and lucid analysis which could be of practical value in any change situation.

RESEARCH UTILIZATION RECOMMENDATIONS

Moriarty, Edward J. Summary of small group recommendations. *Communication, Dissemination, and Utilization of Rehabilitation Research Information.* Washington, D.C.: Joint Liaison Committee of the Council of State Administrators of Vocational Rehabilitation and the Rehabilitation Counselor Educators, Department of Health, Education, and Welfare, 1967, Studies in Rehabilitation Counselor Training, No. 5, pp. 72–73.

PURPOSE

To summarize the recommendations made by the small discussion groups at a conference on Rehabilitation Counselor Training held in December 1966.

METHOD

The author himself served as general group recorder at the conference. His approach to the task of summarizing is not outlined, but the reports of the individual small groups are attached as an appendix to the monograph.

FINDINGS AND CONCLUSIONS

The summarized recommendations are quoted in full text below:

(1) That the counselor be seen as a target for research utilization, and that the counselor be viewed within his total environment, which will include his community, supervisors, consultants, administrators, budget, and the general climate in which he works.

(2) That statewide planning activities pay careful attention to research findings as they proceed.

(3) That State agencies seek closer ties with universities, as they become involved with statewide planning.

(4) That research grants being approved be evaluated on a utilization criterion as well as other research standards.

(5) That, in considering dissemination, the criteria of getting the right material into the right hands at the right time be emphasized.

(6) That human values not be ignored when information concerning rehabilitation is computerized.

(7) That there be better coordination between the research efforts of various agencies and that the VRA stick to projects clearly within the field of rehabilitation.

(8) That humanistic values influence agency program development and that research findings are not always needed to justify attempts to help people. Research programs should be oriented toward assessing and evaluating as results are achieved.

(9) That the VRA form a committee of State agency personnel to help identify research needed to help State agency programs.

(10) That specific budgets be established for operational research in State agencies.

(11) That sensitivity training, through T-groups, be established to help develop receptivity in target groups.

(12) That there be established cooperative university-agency mobile research and innovation teams.

(13) That priority be given to the development of storage and retrieval systems.

(14) That research seminars for administrators, supervisors, and counselors be established.

(15) That the "Rehabilitation Record" contain a tearout, research section written by a science writer, knowledgeable in rehabilitation.

(16) That research either proposed or completed be evaluated with respect to—
  (*a*) its relevance to the counselor's work and problems;
  (*b*) the involvement of the counselor with respect to research being considered; and
  (*c*) the payoff possibilities as related to the counselor in the field.

(17) That research be conducted in two areas—
  (*a*) ways and means of increasing receptivity to research ideas; and
  (*b*) ways and means of increasing utilization of research findings by counselors and supervisors.

(18) That laboratories be established to test out new ideas and to serve as agencies of change.

(19) That there be a public educator in each agency.

(20) That a counselor advisory committee on research be established.

(21) That the VRA construct mailing lists to supplement those of the research and the development centers.

Comment by Reviewer

The primary emphasis here is in-house with regard to the rehabilitation system, but many of the specific recommendations could be considered for transfer to the mental health system.

RESEARCH-PRACTICE RELATIONSHIP
ANALYSIS

Nagi, Saad Z. The practitioner as a partner in research. "Rehabilitation Record," July–August 1965, 1–4.

PURPOSE

In order for any professional field such as rehabilitation to thrive and grow, there must be knowledge and learning as well as practice and service. To serve this end, the partnership between practitioners and researchers is vital. The author discusses the basis of this need, the differences between these two specialized activities, and the factors involved in achieving a closer unity of research and practice.

METHOD

This paper was developed from the observations and knowledge of the author.

FINDINGS AND CONCLUSIONS

1. Since practice involves the application of available techniques, this can serve as the ultimate test not only of the effectiveness of the techniques themselves, but also of the validity of the theoretical structure from which the techniques developed.

2. The state of the art of the practice disciplines based upon the social and behavioral sciences is quite crude in comparison to those derived from the physical sciences. In the case of rehabilitation, there is a glaring inadequacy in the understanding of the behavioral aspects of disability and the ineffectiveness of existing techniques for dealing with it.

3. The development of a comprehensive, dynamic theory of disability would require the pooling together of both the experiences and insight of the practitioner and the theoretical and methodological sophistication of the researcher. This would require four activities:

(*a*) Establishing close ties with the basic disciplines through curricula planning in the applied fields, continued interest on the part of practitioners, and attracting researchers well grounded in these disciplines.

(*b*) Closing the gap between theoretical and applied research, especially in the social and behavioral aspects of disability, since the implications of many contemporary theories have not been studied.

(*c*) Closing the gap between the availability and the utilization of research findings.

(*d*) Establishing means of feedback so that researchers would learn about the practitioners' experiences with research results and their observations about the conditions under which these results hold or deviate.

4. The last two of the above activities would require overcoming barriers in communication, which the author believes can best be accomplished through workshops, seminars, programs of career development for both practitioners and researchers, and a common commitment to understanding the total picture of disability.

5. In addition to the problem of communication, other obstacles to productive cooperation can be identified as deriving from the conflicting orientations of the researcher and practitioner:

(*a*) The controversy over the appropriateness of the clinical versus the statistical approach to inquiry. Both approaches are needed, and can be fruitfully combined by statistical analysis of clinically collected data and vice versa.

(*b*) Practitioners are oriented toward uniqueness while researchers are oriented toward patterns. Actually these two orientations are interdependent, since knowledge of patterns is necessary in identifying uniqueness, and practitioners can contribute valuable input to research through the systematic accounting of the conditions under which uniquenesses emerge.

(*c*) The issue of the tentativeness or finality of information causes conflict, since researchers hold information as tentative while practitioners require information that they can act upon with confidence in therapeutic or counseling situations.

(*d*) The need for controls in research operations causes considerable problems in the applied setting, since the research design may be viewed by practitioners as hindering the provision of optimal services. The author suggests that the provision of services should not be a goal in itself but should be aimed at the testing and improvement of the services themselves and at contributing the rehabilitation and welfare of the client. Dr. Nagi does not see these two goals as necessarily incompatible as long as the research objectives and design do not violate any ethical standards or the orientation toward human welfare.

Comment by Reviewer

The author tends to oversimplify the problem and does not offer any concrete suggestions, but there is value in the clarity of his analysis.

RESEARCH UTILIZATION ANALYSIS

National Science Foundation. *Knowledge into action: Improving the Nation's use of the social sciences.* Report on the Special Commission on the Social Sciences of the National Science Board, report NSB 69-3. Washington, D.C.: U.S. Government Printing Office, 1969.

PURPOSE

The Commission presenting this report was charged with making recommendations for increasing the useful application of the social sciences in the solution of contemporary social problems.

METHOD

Although the method through which the Commission carried out its task is not described in the report, it is assumed that it was primarily analytical. A multidisciplinary group of persons served on the Commission, and the participation of other relevant persons in the preparation of the report is acknowledged.

FINDINGS AND CONCLUSIONS

1. Social scientists can contribute to solving the Nation's problems if full advantage is taken of their strengths. The following major obstacles to the utilization of social science knowledge are identified:

(*a*) There is frequently no institution or agency to note such knowledge and act upon it.
(*b*) In many instances the social sciences provide accurate descriptions or predictions of events, but no solution to the problem. This reinforces a tendency to reject that knowledge: if it provides no answers, it is irrelevant and perhaps troublesome.
(*c*) Social science knowledge may be rejected by some because it is threatening to their own views or to the security of their personal situations.
(*d*) Limited resources may be a significant factor in the rejection of social science knowledge; the solutions advanced may be valid but too demanding of those resources.

2. The expressed demand by the *professions* for social science contributions is infrequent and generally unsystematic. To strengthen and systematize this liaison, the Commission recommends that:

(*a*) Professional schools should include in their curricula more of the social science knowledge relevant to the particular profession. The objective is not to make social scientists of the professionals, but to assure their exposure to the methodology, capabilities, and knowledge of the social sciences relevant to that profession.
(*b*) Provision should be made for increasing collaborative social science-professional research efforts, not only on basic scientific questions of common interest, but also joint attacks on social problems (urban housing, juvenile courts, pollution, urban government organization, delivery of health services) within the purview of the specific professions.

3. Many of the domestic policy issues which the Federal Government is called upon to formulate and implement are more closely related to the social sciences than to the physical and biological sciences. Social sciences must be accorded their proper position as part of the entire national pool of scientific and technological knowledge and skill. To assure that the social sciences are effectively utilized by the Federal Government, the Commission recommends that:

(*a*) The number of social science members on the President's Science Advisory Committee should be increased to assure identification of the social science knowledge that should be available to the Committee.
(*b*) Professional social scientists with backgrounds in relevant areas should be added to, and become an important part of, the Office of Science and Technology Staff.
(*c*) The Council of Economic Advisers should have, among its professional staff and consultants, persons drawn from relevant social sciences other than economics, and persons in the physical sciences and engineering.
(*d*) The present practice of employment of social scientists in the Federal Government should be strengthened and extended; periodic leaves of one academic term at full salary should be instituted to enable professional employees to bring themselves up to date with the very rapid developments of their own and related disciplines, either by means of refresher courses or by working on research of their own choosing.
(*e*) The Federal Government should provide for increased linkages between bodies of statistical data now routinely collected, to improve the quality, range, and utilization of social statistics.

4. There has been more resourceful use of social science knowledge by *business firms and organized labor* than by other identified groups in the national scene and the Commission urges that this association be broadened and strengthened.

5. There have been a number of successful demonstrations of the contributions of social scientists to *community organization* (as consultants; in staff or research capacities; through the interchange which takes place in workshops and

conferences), but the relationship is still essentially haphazard. The Commission recommends that an evaluation be made, first, of the effectiveness of community organizations; and that then an appraisal be undertaken of the opportunities for social science to be brought to bear in community organization.

6. Improved dissemination of social science knowledge to *the public* is desirable because this knowledge is directly applicable to many aspects of the individual's own life (career planning, child rearing, voluntary community activities) and because a more receptive attitude and increased knowledge will raise the public expectations as to the value of social science in dealing with public problems. To these ends, the Commission recommends that:

(*a*) The National Science Foundation should increase its support of efforts to improve social science curricula in elementary and secondary schools.

(*b*) Social science associations and funding organizations should encourage the efforts of scholars studying how children develop an understanding of basic social science concepts; the implications of this research should be translated into redesigned curricula.

(*c*) New Federal efforts should be launched to develop and increase the social science component of continuing education programs.

7. To implement the foregoing recommendations and to provide sustained linkages between the social sciences and all other components in national life will call for a new kind of structure. The Commission recommends that such a structure be provided through the formation of special social problem research institutes where social problems will be analyzed by teams of specialists from the social sciences and other sciences and professions. There is need for a number of such institutes, each dealing with a specific social problem; ideally, they should be independent of university affiliation although having access to university resources and personnel. Each institute must establish close relationships with the agencies or organizations (public and private) faced with the problem it is investigating and responsible for its solution at the policy and action level, so that the implications of the institute's studies can be carried forward to the development of policy alternatives and action programs. The Commission recommends that $10 million be appropriated in fiscal year 1970 to the National Science Foundation for the establishment of such institutes; this budget should increase in subsequent years as the institutes mature; eventually approximately 25 such institutes are envisioned.

Comment by Reviewer

This report deals primarily with strategies for placing the social sciences in proper position vis-a-vis other factors in national life, rather than on research utilization per se. It goes without saying that its objective of deploying social scientists into crucial roles in all other organizations and agencies would enormously facilitate the dissemination of research findings and their ultimate utilization.

The foregoing summary emphasizes the recommendations of the Commission rather than its specific findings, because the latter are implicit in the former and because the Commission makes clear in its report that it considers its recommendations the salient product of its studies.

PRINCIPLES OF PLANNED CHANGE

SYNTHESIS

Niehoff, A. H. The process of innovation. In A. H. Niehoff (Ed.), *Handbook of social change.* Chicago: Aldine, 1966, chapter 2.

PURPOSE

In this chapter, the author abstracts principles and factors affecting kind and rate of change. He provides an analysis of sociocultural change through time.

METHOD

This book is based on samples of innovative programs in underdeveloped countries around the world.

FINDINGS AND CONCLUSIONS

1. Characteristics of the innovator (change agent) which affect change:

(*a*) *Personality.*—He must have empathy and the ability to establish rapport.

(*b*) *Knowledge of local language.*—He needs to know the language and the nature of the subculture.

(*c*) *Technical competence.*—It is less important what kind of reputation the change agent has in his own culture than what kind of image he creates in the local community.

(*d*) *Affiliations.*—He needs to be aware of the effect of his affiliations and either emphasize or deemphasize them as conditions may require.

2. Factors related to the innovator's method of communication:

(*a*) The most effective method of communication is that which makes use of demonstration, personal contact, and feedback from recipients.

(*b*) Formal communication efforts are probably the most inefficient ways to transfer knowledge.

(*c*) Audiovisual techniques, including mass media communication, are hindered in their usefulness because of impersonality and lack of feedback opportunity.

3. Factors related to the nature of the participation of recipients:

(*a*) *Passive compliance toward change*, or the simple lack of opposition, is a very weak base on which to build a change project.

(*b*) *Utilization of the local culture.*—The culture, however old and inefficient particular practices may be, is a system that does work and provides the members with a predictable future. People will not willingly give up their practices until they are well convinced that the new ones are really improvements. The strategy of the replacement method has much less promise than the adaptation method.

4. The change agent's behavior in regards to timing and followup:

(*a*) *Timing.*—The introduction of an idea should be made at an opportune time in relation to special circumstances or events.

(*b*) *Flexibility.*—The change agent must be willing to alter his original plans to compensate for unforeseen difficulties. To insist that the goal remain as initially planned is to risk having the entire project rejected.

(*c*) *Continuity.*—The change agent must engage in consistent followthrough of a plan in a general manner, even if it is altered in its details to fit local circumstances that were not foreseen at the outset. The most important element of this strategy is that the actions of the change agent be predictable from the point of view of the recipients.

(*d*) *Maintenance.*—The change agent must establish a pattern of maintenance. If a project does get near a successful conclusion, the single most important factor which may mean the difference between integration and abandonment is whether or not a pattern of maintenance has been established.

5. Primary variables related to the reaction of the recipients:

(*a*) *Whether they have an initial felt need.*—Any project based on a felt need has a strong motivational base on which to build. If it is lacking, the need will have to be generated, which is usually a difficult task. Three types of felt need are:

(1) *Solicited.*—A need for which the recipients are fully aware to the extent that they solicit assistance from the change agent.

(2) *Demonstrated.*—A need of which the recipients have demonstrated their interest to the extent that they have tried to solve their problem by their own efforts without outside assistance.

(3) *Ascertained.*—A need which, although already existing when the change agent arrives, is only latent within the local social group and must be ascertained by both the innovator and the recipient.

(*b*) *Whether they perceive any practical benefit* in adopting a change. A practical benefit motivation is a sound basis on which to build only if it is perceived as such by recipients. Other effective motivators are:

(1) *Competition.*—Gives perceived status advantage to the individual or group.

(2) *Reward and punishment.*—A reward to induce the recipients to accept a new idea or course of pressure to induce compliance.

(3) *Novelty.*—Includes interest generated for a new idea because it is novel or impressive, a weak motivation.

(*c*) *Whether their traditional leaders are brought into the planning and implementation process.*—The most important characteristic of a local society is its leadership. There is probably no way to ruin the chances for an innovation project more easily than to ignore the traditional leaders or to choose the wrong ones.

Comment by Reviewer

Although based on analysis of innovations in underdeveloped countries, the analysis focuses on variables relevant to understanding of any institutional change and suggests some specific courses of action.

It is interesting to note that Niehoff's analysis of the effectiveness of audiovisual techniques of communication conflicts with the findings of other studies, in which this method was found to be quite effective. It seems likely that Niehoff's objections to this technique would be reduced if it were used in a setting that provided for feedback from the audience.

INFORMATION GATHERING AND DISSEMINATION

ANNUAL REVIEW

Paisley, William J. Information needs and uses. In C. A. Cuadra (Ed.), *Annual review of information science and technology*, vol. 3. New York: Interscience, 1968, pp. 1–30.

PURPOSE

This chapter undertakes a systematic review of recent research in the area of information gathering and dissemination behavior of scientists and technologists. The author expresses a concern about shallow conceptualization in the field, and attempts to conduct his review so as to identify variables that should be accommodated by information theory. Shallow conceptualization implies a failure to consider the following factors:

(1) The full array of information sources that are available.
(2) The uses to which information will be put.
(3) The background, motivation, professional orientation, and other individual characteristics of the user.
(4) The social, political, economic, and other

systems that powerfully affect the user and his work.

(5) The consequences of information use—e.g., productivity.

METHOD

The findings of studies on information needs and uses reported during 1967 are interpreted within the context of the idea that the scientist/technologist stands at the center of many systems that touch every aspect of his work. Paisley identifies 10 interrelated systems affecting the scientist and his relationship to information: (1) The scientist within his culture; (2) the scientist within a political system; (3) the scientist within a membership group; (4) the scientist within a reference group; (5) the scientist within an invisible college; (6) the scientist within a formal organization; (7) a work team; (8) his own head; (9) a legal/economic system; and (10) a formal information system.

FINDINGS AND CONCLUSIONS

The main points which are pertinent to research utilization are:

(1) A study of engineers by Allen and Gerstberger suggests that information "acceptances" are significantly related to the perceived technical quality of a channel but not to accessibility or ease of use. Thus, engineers *use* information channels in proportion to accessibility and ease of use, but they *accept* ideas in proportion to the technical quality of the channels.

(2) Maximum benefit may come from relatively small units of information, transferred rapidly and unerringly to those who, at a given moment, need them.

(3) Several studies show that the work team is the most significant information source for the technologist. Scientists (researchers) lean more heavily on literature sources, while technologists (practitioners) depend on oral sources.

(4) Within the engineering laboratory are found technological "gatekeepers," who are more in touch with outside developments and with the literature than are their coworkers, and who allow the effective entry of information into the organization and assist its dissemination with the organization.

(5) Judgment as to the success of an innovation should be withheld until the innovation has time to "settle."

Comment by Reviewer

Although most of the findings reported in the highly technical review seem most applicable to researcher behavior and information exchange in research development, the reviewer's discussion of the various systems which affect the "scientist" provides valuable insight into the vicissitudes of information flow and use.

RESEARCH UTILIZATION
ANALYSIS AND SUGGESTIONS

Pellegrin, Roland J. The place of research in planned change. In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1965, pp. 65–75.

PURPOSE

Pressures for change bring to the fore serious and complex problems concerning: (1) The nature of the changes that should be introduced, (2) the method, and (3) the timing of innovation introduction. In this article the author discusses the need for reliable research as a basis for planned change in education. He outlines the obstacles to sound educational research, as well as defining the characteristics of reliable educational research.

METHOD

The ideas in this article are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. Educational decisionmakers rely heavily on authority to justify existing policies and prac-

tice. Intuition and commonsense seem to be the major springboards for innovation. Pellegrin alleges that much effort is expended on attempts to achieve goals that are identified through a chain of assumptions resting on a questionable base.

2. There are several obstacles to overcome before educational research can provide reliable knowledge upon which policy, practice, and innovation in education can rest. These obstacles include:

(*a*) There is a widespread lack of appreciation for and understanding of the nature and value of research. Teachers and administrators rely on precedent and commonsense much more than they do on research findings. Thus a vicious circle exists: "(a) Many educators do not conceive of the scientific method and research as being of primary significance to their work; (b) this state of mind creates an atmosphere in which low priority is given to the conduct or utilization of research; (c) because of low evaluation and neglect, research continues to be a dubious enterprise; and (d) because condition (c) exists, (a) is perpetuated."

(*b*) Much existing research is low in quality, weak in the insight it imparts, and of dubious utility to the practitioner.

(*c*) The nature and functions of "theory" are poorly understood. For many practitioners, the term is a synonym for "wild speculation," and an antonym for "practicality."

(*d*) There is considerable confusion about the relationship between empirical fact and values. There is a failure to realize that reliable knowledge can be used to make intelligent value choices possible.

(*e*) Research on topics important to education covers a wide range. These topics are often complex and difficult to investigate.

3. In citing the contributions that research *can* make, the author makes these points: "Research can provide us with new knowledge as well as test existing knowledge. It can hold our present assumptions up for scrutiny, giving us evidence concerning their truth or falsity. Research can be used to evaluate policies and practices. It can also be made an integral part of our experimental programs."

4. The author feels that in order for educational research to be reliable enough to be used as a basis for practice, it must be either: (*a*) The testing of well defined but isolated hypotheses, or (*b*) research directed by systematic and integrated theory.

We must not only train substantial numbers of researchers and disseminate research findings widely, but we have an even larger task, that of developing a respect for and sympathetic attitude toward research throughout the armies of educational practitioners. Otherwise, research will be of limited effectiveness. * * * The development of a scientific perspective and a research orientation is the most urgent and important challenge facing those who are responsible for training programs at all levels.

Comment by Reviewer

The author's description of the vicious circle is good and would seem applicable to the field of mental health, as well as education. His suggestions concerning the need for developing an appreciation for research among practitioners are also applicable.

PRACTITIONERS/RESEARCHERS CONFLICT

CASE STUDY

Poser, E. G., Dunn, I., and Smith, R. M. Resolving conflicts between clinical and research teams. *Mental Hospitals*, 1964, 15(5), 278–282.

PURPOSE

Shortage of available funds is not the only reason that research in psychiatry and clinical psychology has lagged behind research in other branches of medicine. In mental hospitals, administrative and therapeutic considerations limit research at least as often and as severely as insufficient funds. The authors set out to discuss some procedural roadblocks to mental hospital research and some remedies.

METHOD

The ideas expressed in this article are based on the experiences of the authors in conducting a research project at the Verdun Protestant Hospital.

The purpose of the research study was to evaluate the outcome of group therapy with regressed schizophrenic patients. The research wished to compare the outcome of group therapy by trained and untrained therapists.

FINDINGS AND CONCLUSIONS

1. A major source of difficulty in doing research in a mental hospital setting is conflicts between the needs of the researchers and the aims of the clinicians. The clinician often fails to appreciate that the research worker has as deep and imperative a commitment as his own, and the commitments of the two are often antithetical.

2. The first conflict of interest arose when it was necessary to eliminate all group therapy experiences of test patients except for the research related sessions. The conflict was intensified when the researcher requested that a number of patients from each ward should be considered control cases and should not receive any group therapy whatever. "To the therapeutically oriented staff members, this seemed to border on cruelty."

3. Resistance to the temporary reduction of services was further intensified by the fact the ongoing group activity program was a recent development in which many of the staff were involved. In fact, it was the most recent of a number of efforts to mobilize regressed patients. Successful results were just beginning to emerge.

4. Resolution of the conflict came through extensive interpretation by the researchers of the validity of the research needs and the potential long-range gain the research would provide to the clinicians.

5. Final resolution of this conflict came only after the researchers recognized and expressed recognition of the successfulness of the existing practice and pointed out how the results of the research would lead to more widespread use of the successful practice.

6. Continuous interpersonal communication between the research and clinical teams was essential to the overcoming of resistances to the research. Increased recognition of the role of each team by the other was the major factor in overcoming resistance.

7. Motivational problems occurred in both staff members and patient participants throughout the course of the study.

   (*a*) Staff resentment to a research project is rarely expressed directly, but takes the form of subtle noncooperation or sabotage.

   (*b*) This difficulty was dealt with by having regular meetings with all the ward personnel, during which the clinical supervisors and the research directors openly discussed the organizational problems that had arisen and asked everybody for help in solving them. During these sessions the entire staff was told how the project was going and this frequently led to spontaneous comments about one or another patient having shown considerable improvement in his ward behavior. Comments of this kind contributed more than anything else to the resolution of conflicts generated by the project.

Comment by Reviewer

The content of this article has a significant but indirect relevance to the problem of research utilization, since an important requisite to increased utilization is an increased emphasis on practice-based research. This paper discusses some of the problems encountered in doing research in a practice setting. The article also emphasizes the importance of continued communication between researchers and practioners in the implementation of innovation.

SOCIAL CHANGE
CASE STUDY

Rein, Martin. Organization for social change. *Social Work*, April 1964, 9, 32–39.

PURPOSE

To examine the kind of internal structure which permits a social welfare organization to carry out a controversial (innovative) function, to pursue these goals vigorously, and to obtain the resources (money, clients, and personnel) which are necessary for the effective achievement of its goals.

METHOD

The study was carried out through an analysis of affiliates of the national Planned Parenthood Federation. The study consisted of: (1) A historical survey of the development of the national organization; (2) ratings of the relative effectiveness of affiliates by a panel drawn from personnel at PP, correlated with a number of internal variables (money, clients, personnel) and external variables (community acceptance or opposition); (3) case studies of four affiliates, two judged effective and two ineffective by a national rating committee.

FINDINGS AND CONCLUSIONS

1. Planned parenthood follows a locality-responsive style for the achievement of its designated goals; it has a structure and style of operating which are responsive to the needs, demands, and values of the community of local agencies in which it functions.

2. Among the affiliates studied, community acceptance (or opposition) and interagency cooperation were not relevant factors in contributing to the affiliates' possession of resources, nor to their overall effectiveness.

3. Local boards were nonetheless committed to gaining community acceptance and interagency cooperation; this produced fear, resentment, and conflict for other community agencies, and created embarrassment and conflict of loyalty for PP board members who were also active on their boards in the local community.

4. It is concluded that PP's locality-responsive style is not congruent with the controversial goals it pursues.

5. It is suggested that those organizations operating in the context of controversial problem areas, which are most capable of assertive pursuit of their goals do not follow a locality-responsive style; that they not be federated, locally based, nor committed to a strategy of cooperation. A locality-independent style is more congruent for controversial organizations.

Comment by Reviewer

A useful footnote, since it runs counter to the customary advocacy of gaining acceptance for change through consensus and cooperation.

SOCIAL CHANGE
ANALYSIS

Rein, M., and Miller, S. M. Social action on the installment plan. *Trans-action*, 1966, 3(2), 31–38.

PURPOSE

The authors undertake a critical evaluation of demonstration research as an instrument of social change; they assess the strengths and weaknesses of the demonstration project and advance strategies which might improve the efficacy of the demonstration project as an agent of change.

METHOD

The paper is based on analysis, augmented by considerable case material.

FINDINGS AND CONCLUSIONS

1. Although the assumption underlying demonstration projects is that they are a way to get

action, they often postpone change rather than facilitate it. Relatively little money is spent, relatively few people are affected, the real problem is hardly touched, public sense of urgency is deflected, and there is a good chance that by the time the demonstration is finished, public interest will have drifted.

2. The demonstration project has a number of assets: It is fashionable, politically attractive, rationally appealing, inexpensive, and not binding.

3. Such projects also have their liabilities: they may produce unequal distribution of money and resources; they distract from national policy (emphasizing local orientation); they overemphasize success and tend to disregard or play down failure.

4. Before success on a small scale (that is, via a demonstration project) can become a means for change in major institutions, these crucial questions must be raised:

- (*a*) *What kind of influence do the promoters of the demonstration intend to have?*
  - (1) Do they want their project duplicated exactly elsewhere as needed? (*Spread*)
  - (2) Is the purpose of the demonstration simply to attract attention to a problem, to show that something must be done about it? Is the demonstration to serve as a catalyst rather than a model? (*Spillover*)
  - (3) Do the promoters want the original model continued on a more permanent basis? (*Continuity*) If so, an approach for assuring continuity may involve:
    - (a) Participation by a powerful and influential local board.
    - (b) Financial participation through matching funds.
    - (c) The power of knowledge * * * the firm conviction that the results will be so definite, so clear cut and dramatic that organizations will be impelled to find the opportunity to apply the innovations on a large scale. The authors contend that this power is largely mythical because "present-day research methodology is simply inadequate for evaluating comprehensive demonstration programs, which are subject to the vagaries of political expediency."
- (*b*) *Whom do the promoters hope to influence?* The target group must be realistically identified—Is it national? Local? Can diverse targets be satisfied simultaneously? Do the promoters of the project understand the value systems of those they are attempting to influence?
- (*c*) *How will influence be exerted?*
  - (1) *Infiltration from within.*—Sometimes a small demonstration is set up inside an established institution in the hope that the larger unit will eventually adopt the innovation of the smaller. (However, the risks of sabotage are considerable.)
  - (2) *Duplication from without.*—A parallel institution is established which duplicates some or all of the functions of an existing (and change resistant) institution, doing them better, in the hope that the established institution will modify its operation accordingly. (Duplication is costly, of course.)
  - (3) *Pressures from without.*—Citizen groups can be organized to put pressure on local officials as a means of getting action toward implementing demonstration findings. This sometimes promotes inflexibility, closes off alternate courses of action.)

4. The following suggestions are offered to improve the position of demonstration projects as agents of change.

- (*a*) Funders should insist that the demonstration be relevant to the social problem involved and that the staff be clear on questions of social policy.
- (*b*) Greater clarity of purpose should be pursued.
- (*c*) The funders must stay with the projects, not quit when the going gets rough.
- (*d*) The funders must be more concerned with getting and maintaining quality.
- (*e*) New methods of reporting and accountability are needed.
- (*f*) A program cannot promise (or deliver) everything; it must make choices.

(*g*) Adaptation must be built into the design of all demonstrations.

(*h*) Demonstration staffs must be prepared for conflict, and must learn to live with it.

(*i*) Research should be relevant to all social needs; each project must be part of an overall pattern.

Comment by Reviewer

Lively, relevant, and irreverent.

DIFFUSION OF INNOVATION
DEMONSTRATION

Richland, Malcolm. *Traveling seminar and conference for the implementation of educational innovations.* Santa Monica, Calif.: System Development Corp., 1965. (Technical memorandum series 2691.)

PURPOSE

The purpose of the project was to determine whether traveling seminars and the use of outside change agents were effective techniques for shortening the gap between innovation and practice in education.

METHOD

Four groups of approximately 30 educators each, representing four regions of the United States, constituted the traveling seminar. They visited selected schools where significant innovations had been introduced and had been in operation for at least 1 year. Each tour was led by a well-known and respected educator (outside change agent) who was accepted by his professional colleagues as being especially qualified to interpret the experimental foundations upon which a particular innovation was based. Immediately following the seminar, a conference of tour participants was conducted at System Development Corp. on the dynamics of educational change. The evaluative phase of the study was carried out approximately 1 year later through onsite visitations to the participants' own schools. An attempt was made to assess the behavioral effects of the traveling seminar and conference upon the participants. The analysis was accomplished by collecting data on innovational behavior and attitudes toward innovation from the tour participants and an equal number of school personnel (control group) who did not visit innovational schools.

FINDINGS AND CONCLUSIONS

1. The traveling seminar and conference is a highly effective dissemination method for stimulating and facilitating educational innovation. Participating school districts were demonstrated to be more innovative in actual practice and to register more innovative attitudes.

2. There are measurable attributes of school districts related to the innovational behavior of these districts. There was a significant correlation between innovational behavior and the following variables: Urbanity, population density, percentage of Jews, social class, high school density, high teacher salary.

3. The attitude of the local superintendent of schools toward innovation is a significant variable in the introduction of innovations in school districts.

4. It was recommended that the traveling seminar and conference technique be expanded and a number of specific suggestions were advanced for refining and improving the technique.

Comment by Reviewer

This study confirms the findings of other demonstrations concerning the effectiveness of site visits as a means of innovation diffusion.

RESEARCH UTILIZATION SPECIALIST CONFERENCE REPORT

Riley, P., Hooker, S., and Masar, N. Introducing RUS: A link between research and service. "Rehabilitation Record," November–December 1968, 22–24.

PURPOSE

This article introduces a new concept to the field of rehabilitation—the Research Utilization Specialist (RUS), to act as a change agent.

METHOD

This is a summary of a report on two conferences, in 1966 and 1968, sponsored by the University of Florida at Gainesville.

FINDINGS AND CONCLUSIONS

1. Two recent moves to close the gap that still exists between research and practice were the appointment of a Research Utilization Task Force by the VRA Commissioner in the fall of 1966 and the establishment in 1967 of a Research Utilization Branch within the SRS research program. The goals of these two groups are to identify effective research results, to bring them to the attention of practitioners, and to promote the use of innovations from research to improve services to the handicapped, the socially and culturally disadvantaged, the aged, and other groups of people in need.

2. The task force has issued guidelines concerning the role of the RUS to State rehabilitation agencies. Among them are these:

(*a*) As liaison among the State agency, the regional office, and the research program, the RUS will translate research findings into programs which will serve larger numbers of clients more effectively.

(*b*) The RUS will be selected by State rehabilitation agencies and largely supported by SRS research funds during a 5-year period of development of the role of the new change agent.

(*c*) To experiment with the change agent concept, SRS will begin by supporting a RUS in one State of each region. Each regional office will select the State, which will then submit a proposal for the RUS project to SRS.

3. A second conference in 1968 spawned the following conclusions:

(*a*) The role of the RUS is not merely to persuade people to adopt innovations coming from research, but also to help them adapt the findings for use in practical situations.

(*b*) The RUS will have the difficult job of functioning as both an administrator and a sympathetic listener. He must be able to work effectively with the researcher, and also speak the language of the practitioner.

(*c*) The RUS will implement the findings of previously accomplished research. He will also stimulate new research in those areas directly related to the needs of fieldworkers.

(*d*) In addition to working with professionals in rehabilitation, the RUS must maintain close communication with the disabled and disadvantaged people who are served in the rehabilitation program.

(*e*) While the RUS may not often work individually with rehabilitation counselors, he will need to do so on occasion so that he will be aware of their needs and problems.

(*f*) The new discipline should probably be placed in the personnel structure on a level with State supervisors of staff development and State facilities specialists.

(*g*) The magnitude of the RUS program in SRS must be great enough to insure that its effect can be detected.

(*h*) Communication among the RUS trainees will be stressed during the training period, rather than the didactic, lecture-teaching method of instruction.

(*i*) Evaluation will be conducted to determine the effect of the training program on the attitudes, perceptions, and skills of the RUS and to note the number and kinds of changes the RUS effects in the delivery of rehabilitation services.

Comment by Reviewer

This article outlines the expected role of a new position in the field of rehabilitation, the research utilization specialist. It reports the findings of two conferences concerned with establishing this new position.

DISSEMINATION
SURVEY

Rittenhouse, Carl H. *Innovation problems and information needs of educational practitioners.* Menlo Park, Calif.: Stanford Research Institute, SRI–URU 8084, May 1970. (Final Report for U.S. Office of Education, Contract No. OEC 09–099009–4590.)

PURPOSE

The purpose is to identify those problems of educational practitioners which might be solved by information generated by research developments; to determine what type of information would be helpful in making decisions concerning educational improvements. The aim is to aid the Office of Education in targeting future interpretive studies.

METHOD

The inquiry was carried out primarily by mailed questionnaires, supplemented by some in-person interviews. An initial questionnaire was sent to superintendents of 1,203 school districts in the country and to chief executive officers of 2,196 institutions of higher education. From a list of innovative programs, respondents were asked to check which had been adopted or were under consideration for adoption. A second questionnaire was sent to 150 institutions in each of the above categories, asking, with respect to the five higher ranking program items in Phase I, the types of information they had needed, where it had been obtained, and its degree of importance in relation to decision making. Conclusions were based on survey findings and previous relevant studies.

FINDINGS AND CONCLUSIONS

1. Concerning elementary and secondary school districts:

(*a*) Process of change is usually orderly, but the search for information is less orderly. These districts need access to information from districts similar to their own.

(*b*) The school superintendent is the key individual in the change process.

(*c*) Larger districts, with greater resources and capabilities, are more innovative than the smaller ones.

(*d*) Users are less interested in research findings presented in professional journals than in information oriented to operations.

2. Concerning institutions of higher education:

(*a*) The change process is more complex at this level than it is for elementary and secondary schools, and the responsibility for change more diffuse.

(*b*) Personnel at these institutions are more sophisticated than their elementary and secondary school counterparts in searching out the information they need.

(*c*) Those institutions that engage in long-range planning tend to be orderly and rational about anticipating future change and preparing for it; the preparation includes making use of available research.

3. The author recommends that surveys such as those conducted in this project be repeated (with some suggested modifications) periodically in order to systematize and update information concerning the problems and needs of educational practitioners.

Comment by Reviewer

Of interest because it reflects an attempt to establish priorities in activities intended to stimulate educational innovation.

RESEARCH UTILIZATION INVESTIGATION

Roberts, A. O. H. and Larsen, J. K. *Effective use of mental health research information.* Palo Alto, Calif.: American Institutes for Research, AIR–820, January 1971. (Final Report for National Institute of Mental Health, Grant No. 1 RO1 MH 15445.)

PURPOSE

The starting point in this study was an identification of innovative programs already introduced in an institution, then tracing them backwards to the source of the innovation. The objectives were to identify empirically those conditions which facilitate or inhibit utilization of mental health research and to deprive implications for means to increase information use.

METHOD

Data were collected first by interview with staff members in five mental health institutions, then in try-out questionnaires sent to institutions in 17 western states, then by visits to six more western institutions, at which about 60 persons were interviewed, and ultimately in a questionnaire survey involving 207 institutions located primarily in those states east of the Mississippi River. From these 207 institutions, responses were received from 588 innovators, 97 librarians and 88 administrators.

FINDINGS AND CONCLUSIONS

1. Most persons who attempt to initiate improved mental health care practices (innovators) get their ideas from the work or experience of others (practitioners) rather than from outside sources (researchers). Most innovations are the result of experience, not research.

2. The primary source of the innovative idea is personal contact. Formal communication channels (books, journals, speeches, etc.) proved to be relatively unproductive. Contact with others, whether in person or by mail, was preferred to fomal documentation.

3. The strategic personal contact was the well-informed colleague ("gatekeeper"). Valued channels for maintaining colleague contact included staff meetings, informal as well as formal consultation and discussion, site visits, seminars and colloquia.

4. Library staff size and the existence of a central library were important to innovative state MI institutions; the number of books checked out and the number of journals in the library were important in state MR hospitals.

5. Contact with an in-house research department had a positive value in state MI but a negative value in state MR.

6. To summarize: the single source of variance which can be manipulated to increase information utilization is personal interaction; if the ideas that come from such interaction provide the catalyst for information-seeking behavior, other sources of information will be used.

Comment by Reviewer

This is, in effect, a companion piece to the Human Interaction Research Institute study, which was carried on concurrently. It offers a significant body of specific information which can be fitted into the broader framework of the HIRI study.

RESEARCHER/PRACTITIONER RELATIONSHIP

ANALYSIS

Rodman, H., and Kolodny, R. Organizational strains in the researcher-practitioner relationship. In A. W. Gouldner and S. M. Miller (Eds.), *Applied sociology: Opportunities and problems.* New York: Free Press, 1965.

PURPOSE

With social science research increasingly moving into clinical settings (mental hospitals, child guidance clinics, social work agencies), the authors undertake to explore the problems which researchers and practitioners encounter under such circumstances, and to determine whether some of the problems stem from the organizational structure of the professional agency.

METHOD

The analysis is based partly on the authors' experiences and partly on a review of the literature.

FINDINGS AND CONCLUSIONS

1. To some extent, the conflict between practitioner and researcher arises from different orientation (human beings versus statistics; the intuitive versus the logical), but cannot totally explain the problems which are encountered when a researcher works in a clinical setting.

2. Often, the prime function of the researcher is to undertake an evaluation. This, by its very nature, threatens the practitioner. What the social scientist thinks of as an objective investigation is perceived by the practitioner as a hostile attack.

3. The researcher and the practitioner have totally different organizations of work and time. The practitioner tends to have his workday tightly scheduled; the researcher often has a more flexible work schedule. The researcher is often younger than the practitioner, yet he tends to have more prestige and higher monetary rewards. The researcher places a great deal of emphasis on recordkeeping, and by doing so, tends to add to the workload of the already burdened practitioner.

4. The researcher frequently neglects to give publication credit to the practitioners who have helped him.

5. The researcher, by virtue of his placement within the organizational structure, tends to have official lines of communication with administration rather than with the practitioners.

6. The researcher is often in a marginal position with respect to the workfield in which he is conducting research. The practitioners within an agency "share a professional culture which they act out in their daily experiences." The researcher tends to be the loner, the outsider.

7. Practitioners may react to this stressful situation by denial and displacement, in which the researcher is not only isolated but virtually annihilated. Sometimes this seeming attack on the research is a covert attack upon the administration.

8. In some agencies, practitioners deal with the researcher through a style of one-way humor which stresses the latter's marginal position.

9. Several formal ways of alleviating this nonproductive stress are reported: Supporting the researcher with an outside consultant; appointing a professionally trained practitioner to the researcher role; using the researcher-practitioner team approach (in some cases the practitioners actually originate the research and hire the social scientists); delegating the research responsibility to an outside agency so that its focus is academic rather than clinical and the clinicians become the marginal members of the unit.

Comment by Reviewer

Although the emphasis is primarily on a relationship that exists in the process of research, it has valid implications for the subsequent utilization of the research.

DISSEMINATION OF INNOVATION

ANALYSIS

Rogers, Everett M. Communication of vocational rehabilitation innovations. *Communication, Dissemination, and Utilization of Rehabilitation Research Information.* Washington, D.C.: Joint Liaison Committee of the Council of State Administrators of Vocational Rehabilitation and the Rehabilitation Counselor Educators, Department of Health, Education, and Welfare, 1967, Studies in Rehabilitation Counselor Training, No. 5, pp. 19–32.

PURPOSE

In this paper the author concentrates on the problem of dissemination of innovation in the field of vocational rehabilitation. He reviews established principles of diffusion of innovations, identifies some unique attributes of the vocational rehabilitation setting which affect the applicability of these generalizations, and draws some implications for action and for future research.

METHOD

The author draws from his own knowledge and experience as well as the knowledge of others in the area of innovation diffusion and research utilization.

FINDINGS AND CONCLUSIONS

Diffusion may be viewed as the *communication* of an *innovation* from some *source* to members of a *social system* over *time*. Some general principles which apply to these core factors are:

1. *Source:*

(*a*) The credibility of the source of an innovation to the potential adopters influences its adoption; the more credible the source of and innovation, the greater is the likelihood of its adoption.

(*b*) The flow of innovations is affected by the social distance between the source and potential users. Such distance increases the probability of communication breakdown. The fact that rehabilitation sources are often far removed from potential users is a significant feature of this field.

2. *Innovation:*

(*a*) The perception of the *relative advantage* of an innovation is important to its adoption. Vocational rehabilitation innovations are often of low relative advantage or are difficult to assess.

(*b*) The *compatibility* of an innovation with the existing values and past experiences of the adopters affects its adoption.

(*c*) The *complexity* of an innovation affects the rate of dissemination; the more difficult to understand innovation will be disseminated more slowly.

(*d*) The *divisibility* of an innovation affects its adoption. For example, counselors are more likely to adopt a new technique with all clients after they have successfully tried it out on a few clients.

(*e*) The *communicability* of an innovation, especially in terms of having visible results, influences adoption. Nonmaterial ideas diffuse more slowly than material innovations.

3. The nature of the communication channels which, like the source and the unit of adoption, affect the rate of adoption. Mass media channels are most useful in securing awareness and increasing the level of knowledge about innovations; to secure attitude change and actual adoption of an innovation, interpersonal communication is more effective.

4. Receivers of innovations may be categorized along a continuum of innovativeness (vis, the relative earliness or lateness of adoption of an idea in comparison with other members of the given social system). The five adopter categories are: Innovators, early adopters, early majority, late majority, and laggards.

5. *Distinctive Aspects of Diffusion in Vocational Rehabilitation.* Several distinct features of the field of vocational rehabilitation (VR) may be identified which affect the diffusion of innovations in this field and the applicability of diffusion findings based on studies in different fields:

(*a*) The social system receiving the innovation consists of professionals. Studies of diffusion in other professional fields indicate that the professionalism of potential adopters is an important influence on the way in which innovations spread. Since most diffusion studies have involved nonprofesfesional adopters, care should be exercised in generalizing findings from these fields.

(*b*) The physical and social distance between the source of innovation and the potential adopters is often considerable. The VR counselor in one part of the country may be the potential user of an innovation developed in a psychology lab of a university in another State. Even if the counselor is a regular reader of journals in his field, the chances are poor that he would discover this innovation, since it would probably be reported in a psychology journal. Relatedly, VR is faced with a problem of how to obtain relevant information that is developed in other fields, but is outside the immediate subject area and hence not in the "knowledge path" of VR personnel.

(*c*) VR hierarchical structures often act as barriers or forces of resistance to innovation diffusion in that the organizational structure tends to create both horizontal (especially between agencies) and vertical communication barriers.

(*d*) The type of innovation decision is often "forced" rather than "optional," and is likely to be made collectively rather than individually. Forced, or authoritative, decisions are more likely to be circumvented and/or discontinued. Group decisionmaking is a longer process, but is more likely to result in lasting change.

(*e*) VR innovations seldom have high relative advantage, and the effects are of low visibility and are difficult to evaluate in the short range.

(*f*) The "closure" orientation of VR personnel serves to divert attention from consideration of innovative ideas. An emphasis on the quantity of closed cases rather than the quality of services rendered leaves counselors with little time to "fool around" with research results. It also supports a focus on short-range goals, while gains from innovations are likely to appear on a long-range basis.

6. *Recommendations for More Effective Dissemination.*

(*a*) Establish better communication links between the source and the potential users of innovations.
  (1) Change agents are needed to disseminate research findings to practitioners.
  (2) A liaison role, such as that of the extension specialist in agriculture, is needed to facilitate two-way communication between researchers and counselors.

(*b*) Determine the relative effectiveness of certain demonstrations and demonstration methods as compared to others. The findings in agriculture are that the most effective demonstrators—
  (1) are more similar to their followers;
  (2) are not overly identified with the agencies of change; and
  (3) demonstrate innovations which are communicable and not too complex.

(*c*) VR personnel should be encouraged to become better research consumers. One means would be to consolidate research input to counselors, as part of either preservice or inservice training, into a single course focused on information about research for the practitioner.

(*d*) Establish an information retrieval system for relevant research results. A retrieval system designed to meet VR information needs would help to short circuit the bureaucratic barriers to innovation dissemination.

(*e*) Bring VR researchers and administrators into the world of the counselor upon occasion. Research thus developed from a shared reality would be more likely to have relevance for potential users.

Comment by Reviewer

This is a very well-organized presentation of the basic concepts and findings on diffusion. Rogers' discussion of the unique facets of the field of vocational rehabilitation is helpful. One might question, however, if the factor of "professionalism" of the social system into which the innovation is introduced will in itself facilitate diffusion. This seems to assume that professionals are less likely to resist change that nonprofessionals, or at least less likely to react emotionally to perceived change. Given the difference between the investment of the counselor in his methodology and the housewife and her soap powder, a more cautious attitude might be expected on the part of the professional.

DIFFUSION REVIEW

Rogers, Everett M. *Diffusion of innovations.* New York: Free Press, 1962.

PURPOSE

To synthesize and evaluate available research findings and theories on the diffusion of innovations in order to attempt to identify the common threads that run through all the research traditions on the subject of diffusion.

METHOD

More than 500 publications on diffusion of innovations are reviewed, including 11 major research projects of the author. While the author writes from a background of rural sociology, the survey of research literature is multidisciplinary in scope, reviewing relevant material in the fields of anthropology, sociology, education, economics, industrial engineering, industrial history, and public health.

Four essential elements in the analysis of diffusion are: (1) The innovation, (2) its communication from one individual to another, (3) in a social system, and (4) over time. Given this basic framework, Rogers defines several basic concepts for his analysis:

Innovation.—An idea perceived as new by the individual.

Diffusion.—The process by which an innovation spreads from its source of invention or creation to its ultimate users or adopters.

Social system.—A population of individuals who are functionally differentiated and engaged in collective problem-solving behavior.

Adoption.—A decision to continue full use of an innovation.

Adoption process.—The mental process through which an individual passes from first hearing about an innovation to final adoption.

Innovativeness.—The degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system.

Adopter categories.—Classifications of individuals within a social system on the basis of innovativeness.

FINDINGS AND CONCLUSIONS

1. Certain *characteristics of the innovation*, as perceived by members of a social system, affect its rate of adoption:

(*a*) *Relative advantage.*—The degree to which an innovation is superior to ideas it supersedes. A crisis emphasizes the relative advantage of an innovation and affects its rate of adoption.

(*b*) *Compatibility.*—The degree to which an innovation is consistent with existing values and past experiences of the adopters.

(*c*) *Complexity.*—The degree to which an innovation is relatively difficult to understand and use. The research evidence is "far from conclusive" regarding this factor.

(*d*) *Divisibility.*—The degree to which an innovation may be tried on a limited basis (trialibility). Several investigations suggest that earlier adopters may perceive divisibility as more important than later adopters.

(*e*) *Communicability.*—The degree to which the results of an innovation may be diffused to others.

2. The *adoption process* consists of five stages: Awareness, interest, evaluation, trial, adoption.

(*a*) There is little evidence that lack of knowledge about innovations actually delays their adoption. (Assuming there is awareness.)
(*b*) Awareness occurs at a more rapid rate than does adoption.
(*c*) The first individuals to adopt innovations require a shorter adoption period than do relatively later adopters.
(*d*) The awareness-to-trial period is longer than the trial-to-adoption period.
(*e*) The awareness-to-trial period is shorter for relatively earlier adopters than for later adopters.
(*f*) The trial-to-adoption period is longer for relatively earlier adopters than for later adopters.

3. *Five classes of adopters may be identified based upon degree of innovativeness: Innovators (venturesome); early adopters (respectful); early majority (deliberate); later majority (skeptical); laggards (traditional).*

(*a*) Innovativeness of individuals is related to having a modern rather than a traditional orientation.
(*b*) An individual's innovativeness varies directly with the norms of his social system regarding innovativeness.
(*c*) There is considerable shifting of individuals in a social system from one adopter category to another over time.
(*d*) Occupants of each adopter category are mainly influenced by individuals of the same or a more innovative adopter category.
(*e*) Differences in innovativeness between individuals are a more important barrier to the flow of ideas in a social system where the norms are modern than where they are traditional.
(*f*) Adopter distributions follow a bell-shaped curve over time and approach normality.

4. *Some generalizations may be made regarding adopter categories:*

(*a*) Innovators are perceived as deviants by other members of their social system.
(*b*) Innovators perceive themselves as deviant from the norms of their social system.
(*c*) Earlier adopters have higher social status than later adopters.
(*d*) Earlier adopters have a more favorable financial position than later adopters.
(*e*) Earlier adopters have more specialized operations than later adopters.
(*f*) Earlier adopters are more cosmopolite than later adopters.
(*g*) Earlier adopters have more opinion leadership than later adopters.
(*h*) Relatively later adopters are more likely to discontinue innovations than are earlier adopters.
(*i*) Laggards are most likely to drop out of the social system.

5. *The influence of opinion leaders—those individuals from whom others seek advice and information—affects adoption of innovations.*

(*a*) Opinion leaders conform more closely to social system norms than the average member.
(*b*) There is little overlapping among the different types of opinion leaders.
(*c*) Opinion leaders use more impersonal, technically accurate, and cosmopolite sources of information than do their followers.
(*d*) Opinion leaders are more cosmopolite than their followers.
(*e*) Opinion leaders have more social participation than their followers.
(*f*) Opinion leaders have higher social status than their followers.
(*g*) Opinion leaders are more innovative than their followers.
(*h*) Social system norms on innovativeness seem to determine, at least in part, the innovativeness of opinion leaders.

6. *Different kinds of information are important to different adopter categories and at different stages of the adoption process.*

(*a*) Earlier adopters utilize information sources that are in closer contact with the origin of new ideas than later adopters.
(*b*) Earlier adopters utilize a greater number of different information sources than do later adopters.

(*c*) Personal influence from peers is most important at the evaluation stage of the adoption process and less important at other stages.

(*d*) Personal influence from peers is more important for relatively later adopters than for earlier adopters.

(*e*) Personal influence from peers is more important in uncertain situations than in clear-cut situations.

(*f*) Impersonal information sources and cosmopolite information sources (sources external to a particular social system) are most important at the awareness stage, and personal and localite sources are most important at the evaluation stage.

(*g*) Impersonal and cosmopolite sources of information are more important than personal and localite sources for relatively earlier adopters than for later adopters.

7. *The role of change agent may significantly affect diffusion and adoption.*

(*a*) The extent of promotional efforts by change agents is directly related to the rate of adoption of an innovation.

(*b*) Commercial change agents (e.g., salesmen) are more important at the trial stage than at any other stage in the adoption process.

(*c*) Commercial change agents are more important for earlier adopters than for later adopters at the trial stage.

(*d*) Change agents have more communication with higher status than with lower status members of a social system.

8. *Five guidelines for a projected strategy of change might be considered by change agents:*

(*a*) A program of change should be tailored to fit cultural values and past experiences.

(*b*) A change agent's clients must perceive a need for an innovation before it can be successfully introduced.

(*c*) Change agents should be more concerned with improving their clients' competence in evaluating new ideas and less with simply promoting innovations per se.

(*d*) Change agents should concentrate their efforts upon opinion leaders in the early stages of the diffusion of an innovation.

(*e*) The social consequences of innovations should be anticipated and prevented if undesirable.

Comment by Reviewer

Rogers' review provides an excellent starting point for the conceptualization of the problem of research utilization, since diffusion is one major aspect.

DIFFUSION OF INNOVATION
REVIEW/ANALYSIS

Rogers, E. M., with Shoemaker, F. F. *Communication of innovations: A cross-cultural approach.* New York: Free Press, 1970.

PURPOSE

To synthesize, from research on the diffusion of innovations, a series of generalizations, each of which represents the relationship found between two or more ideas; to thereby facilitate understanding of the diffusion process by change agents and social scientists in order to provide linkages with more general social science theory; to suggest areas of needed research, and to prevent unnecessary duplication of research effort.

METHOD

More than 1,500 publications on diffusion are reviewed to relate empirical understandings about the diffusion of ideas to a theory of social change. Cross-cultural similarities and contrasts are treated in diffusion generalizations. A comparison of diffusion understandings is made between more and less developed countries.

FINDINGS AND CONCLUSIONS

1. Communication is essential for social change.

(*a*) *Social change* is the process by which alteration occurs in the structure and function of a social system through—

(1) *invention*—creation and development of new ideas;

(2) *diffusion*—communication of these ideas to members of the social system; and

(3) *consequences*—changes that occur in the system as a result of adoption or rejection of the innovation—

(a) *immanent change*—members of a social system create and develop a new idea with little or no external influence; and

(b) *contact change*—sources external to the social system introduce a new idea. *Selective contact* change is adoption or rejection of a new idea on the basis of needs. *Directed contact change* is caused by outsiders who introduce new ideas in order to achieve predetermined goals.

Much change that occurs today is *directed contact change* and is therefore the main concern of this book.

(*b*) *Middle-range analysis* is an approach to a theory of social change consisting of accumulating and synthesizing middle-range generalizations from empirical results on the diffusion of innovations. This approach, which could eliminate the lack of rapprochement between research and theory, is as follows:

(1) Explicate all essential concepts.

(2) Postulate a relationship between two concepts in a *theoretical hypothesis.*

(3) Test this hypothesis with a corresponding *empirical hypothesis*, which is the postulated relationship between two operational measures of concepts (an operation is the empirical referent of a concept).

(4) Support or reject a theoretical hypothesis by testing corresponding empirical hypotheses, resulting eventually in a series of middle-range generalizations.

Middle-range generalizations are the stepping stones to more general theories of social change, once abstracted to a higher level of generality.

(*c*) *Communication* is the process by which messages are transferred from a source to a receiver.

(*d*) *Diffusion* is a special type of communication concerned with the spreading of messages that are *new* ideas. Risk is often associated with the reception of innovations. An individual's behavior varies, with the reception of new ideas and risks, from his reaction to routine ideas. This behavior may be dependent on—

(1) *heterophily*—degree to which pairs of individuals who interact are different in certain attributes such as beliefs, values, education, social status, etc., and

(2) *homophily*—degree to which pairs of individuals who interact are similar in certain attributes.

Most human communication takes place between individuals who are *homophilous*, which leads to more effective communication. But in the diffusion of innovations, there is often *heterophily* between source and receiver, which leads to special problems in securing effective communication.

(*e*) *The main elements in the diffusion of new ideas* are:

(1) *The innovation*—an idea, practice, or object perceived as new by the individual, the characteristics of which, as perceived by members of a social system, determine its rate of adoption; five general characteristics of innovations are:

(a) *Relative advantage*—degree to which new idea is better than the idea it supersedes.

(b) *Compatibility*—degree to which new idea fits in with existing values, experiences, and needs of receivers.

(c) *Complexity*—degree to which innovation is perceived as difficult to understand and use. (This is the only innovation attribute seen as *negatively* related to its rate of adoption.)

(d) *Trialability*—degree to which new idea may be experimented with on a limited basis.

(e) *Observability*—degree to which

results of an innovation are visible to others.

(2) *Rate of adoption*—relative speed with which an innovation is adopted by members of a social system.

Factors other than attributes that affect rate of adoption:

(a) Type of innovation decision.
(b) Nature of communication channels used to diffuse the innovation.
(c) Nature of the social system.
(d) Extent of change agents' promotion efforts in diffusing the innovation.

Diffusion effect—cumulatively increasing degree of influence upon an individual to adopt or reject an innovation because of increasing rate of knowledge about the innovation and because of the adoption or rejection of the innovation in the social system.

Adoption can be expected once the awareness-knowledge level *exceeds 20 to 30* percent of members in a social system.

The diffusion effect is greater in social systems with a higher degree of *communication integration*—degree to which units in a system are interconnected by interpersonal communication channels.

Overadoption—adoption of an innovation by an individual when experts feel he should reject, because of:

(a) Insufficient knowledge.
(b) Inability to predict consequences.
(c) A mania for the new.

(3) *Communication channels*—the means by which a message gets from a source to a receiver.

(a) *Interpersonal channels*—those that involve a face-to-face exchange between two or more people.

(b) *Mass media channels*—all means that involve a mass medium, such as radio, television, film, newspapers, where a few individuals (or one) can reach many.

Mass media channels are more important at the knowledge function in the innovative-decision process, and interpersonal channels are relatively more important at the persuasion function.

Mass media channels are more important than interpersonal channels for earlier adopters than for later adopters.

(c) *Media forums*—small groups of individuals who meet regularly to receive a mass media program and discuss its contents. They combine mass and interpersonal channels. They are effective in less developed countries because they exert social pressure on attendance and participation and on attitude change in small groups.

(4) *Time*—referring to the amount of time of the *innovation-decision process*, which is the mental process through which an individual passes from first knowledge of an innovation to a decision to adopt or reject and to confirmation of this decision: (*a*) Knowledge, (*b*) persuasion, (*c*) decision (adoption or rejection), and (d) confirmation (reinforcement or reversal of previous decision).

(5) *Three main types of innovation decisions* are—

(a) *Optional decisions*—made by individuals regardless of decisions made by other members of the system.

(b) *Collective decisions*—made by consensus of individuals in the social system by a series of subprocesses.

stimulation of interest in new idea;
initiation of new idea into system;
legitimation of new idea by power holders;
decision to act; and
action or execution of idea.

Stimulators of a social system are more cosmopolitan and perceive needs quickly. *Initiators* favor change and know their system well. *Legitimizers* are high-status power holders.

The *rate of adoption* of a collective innovation is positively related to the degree to which the *legitimizers* are involved in the decisionmaking process and to the degree of power concentration in the social system.

Member acceptance of collective innovation decisions is positively related to member cohesion (*participation* in decisionmaking process) with the social system.

Change agents can be stimulators and initiators of collective innovation decisions but can seldom be legitimizers, because they lack high status, social power, and established credibility.

(c) *Authority decisions*—forced on an individual by someone in a superordinate power position.

Authority innovative decisions are common in *formal organizations*—social systems deliberately established for achieving predetermined goals, where there are prescribed roles, an authority structure, formal system of rules and regulations, and informal practices peculiar to each organization.

Authority innovation-decision process:

(1) *knowledge* about need for change on the part of the decision unit (from internal or external sources);

(2) *persuasion and evaluation* of new idea by decision unit;

(3) *decision to accept* or reject by decision unit;

(4) *communication* of decision by unit to organization; and

(5) *action* by *adoption* units—their participation in decisionmaking process will influence their satisfaction with new idea; nonparticipation could lead to *innovation dissonance*, which is a discrepancy between an individual's attitude toward an innovation and his decision to adopt or reject it.

(6) *Two basic approaches to organizational change* are:

- (a) Authoritative—decisions made by centralized power.
- (b) Participative—wide sharing of power.

The rate of adoption is *faster* by authoritative approach but more likely to remain *stable* with participative approach.

The innovation-decisions process: (1) Best fits the case of optional decisions, (2) must be modified for collective and authority decisions, and (3) may vary in its stages for some individuals and innovators.

There is a need to know whether the nature of the innovation-decision process is different for innovators than for laggards.

(7) *Discontinuance*—decision to cease use of innovation after adopting it.

- (a) *Replacement discontinuance*—rejection of innovation for a better idea.
- (b) *Disenchantment discontinuance*—rejection of innovation because of its unsatisfactory performance.

(8) *Relative innovativeness*—degree to which an individual is earlier in adopting new ideas than other members of his social system: (*a*) Innovators, (*b*) early adopters, (*c*) early majority, (*d*) late majority, and (*e*) laggards.

Late adopters are more likely to discontinue innovations than are earlier adopters.

Innovations with a high rate of adoption have a low rate of discontinuance.

Early adopters have a shorter innovation-decision period than late adopters because the rate of awareness knowledge for an innovation is more rapid than its rate of adoption.

Early adopters tend to be more modern, better educated, have greater rationality, more favorable attitudes toward change and risk.

(*f*) *Diffusion* occurs within a social system because the system's social structure can have an important influence on the spread of new ideas.

(1) *Social structure*—statuses or positions in a social system and how these statuses are arranged (hierarchical, etc.); it acts to impede or facilitate the rate of diffusion and adoption of new ideas through "system effects":

(a) *norms*—established behavior patterns for members of a social system, *modern norms* existing in a more change-oriented system than *traditional norms;*

(b) *opinion leadership*—degree to which an individual is able to informally influence other individuals' attitudes or overt behavior in a desired way with relative frequency.

Opinion leaders are important in diffusion of innovations.

Opinion leaders are receivers of communications who pass information on to followers.

Opinion leaders can be barriers to innovations in a social system if they are homophilous with followers and contrary to the innovations.

Opinion leaders have greater mass media exposure than followers.

Opinion leaders conform more closely to a system's norms than do their followers. When system's norms favor change, opinion leaders are more innovative.

(1) *Polymorphism* — individual acts as opinion leader for a variety of topics.

(2) *Monomorphism* — individual acts as opinion leader for one topic.

When a system's norms are more modern, opinion leadership is more monomorphic.

(2) *Change agent*—professional person who attempts to influence innovation decisions in a direction he feels is desirable:

(a) develops a need for change in clients;

(b) establishes a change relationship with them;

(c) diagnoses problems;

(d) creates in clients an intent to change;

(e) translates intent into action;

(f) stabilizes change, prevents discontinuances; and

(g) achieves terminal relationship with clients.

Change agent success is related to:

(a) extent of change agent effort;

(b) client orientation rather than change-agency orientation;

(c) how compatible program is with clients' needs;

(d) his empathy with clients;

(e) his homophily with clients;

(f) extent he works through opinion leaders;

(g) credibility in eyes of his clients; and

(h) his efforts in increasing clients' ability to evaluate innovations.

Change agent contact is related to:

(a) higher social status among clients;

(b) greater social participation;

(c) higher education and literacy; and

(d) cosmopoliteness.

(3) *Diffusion research* is emerging as a single, integrated body of concepts and generalizations, even though investigations are conducted by researchers in several scientific disciplines. A *research tradition* is a series of investigations—approached from such major fields as anthropology, early sociology, rural sociology, education, medical sociology, communication, and marketing—on a

similar topic in which successive studies are influenced by preceding inquiries.

There are five major shortcomings of diffusion research:

- (a) dependence on recall data and difficulties in determining the time-order of diffusion variables;
- (b) overemphasis on the nature of innovations studied leads to separate diffusion research traditions which can impede integration of the field;
- (c) overconcern with optional decisions, to the exclusion of collective and authority decisions;
- (d) use of individual as a unit of analysis rather than depending on a relational analysis, which is more appropriate for diffusion studies; and
- (e) concentration on the United States and Western Europe, retarding cross-cultural testing of generalizations.

(*g*) *Consequences*—changes that occur in a social system as a result of adoption or rejection of an innovation.

- (1) Consequences have not been studied (as have *invention* and *diffusion*) because:
  - (a) change agencies overemphasize adoption, assuming consequences will be positive;
  - (b) research methods may be inappropriate to measure consequences; and
  - (c) consequences are difficult to measure.
- (2) Consequences may be classified as:
  - (a) *functional* (desirable) or *dysfunctional* (undesirable);
  - (b) *direct* (occur in immediate response) or *indirect* (result from direct); and
  - (c) *manifest* (intended by members) or *latent* (not intended).
- (3) Three intrinsic elements of an innovation:
  - (a) *form*—observable physical appearance;
  - (b) *function*—contribution to members' way of life; and
  - (c) *meaning*—subjective perception of innovation by members.

Change agents can more easily anticipate form and function of an innovation for their clients than its meaning.

(*h*) *Equilibrium*—must be considered to determine an ideal rate of change.

- (1) *Stable equilibrium*—almost no change in social system.
- (2) *Dynamic equilibrium*—rate of change is equal to system's ability to cope with it.
- (3) *Disequilibrium*—rate of change is too rapid to permit system to adjust.

Change agents generally want to achieve a rate of change that leads to dynamic equilibrium, somewhere short of disequilibrium.

2. Research is needed on the attributes of innovations:

- (*a*) Measuring perceived attributes at the time of decision.
- (*b*) Measuring differential perceptions by different groups.
- (*c*) Improving measurement of perceived attributes.
- (*d*) Making factor analyses of perceived attributes.
- (*e*) Studying innovation bundles rather than single innovations.
  - (1) In the minds of adopters, an innovation is not a single, discrete, separate unit for analysis.
  - (2) Does adoption of any single innovation trigger adoption of other ideas in the complex of innovations?

Comment by Reviewer

A useful and perceptive compendium of previously published studies of diffusion, in which directions for further study are indicated.

CHANGE
SYNTHESIS

Rogers, E. M., and Svenning, L. *Managing change.* Washington, D.C.: Operation PEP (a statewide project to prepare educational planners for California), U.S. Office of Education, Department of Health, Education, and Welfare, September 1969.

PURPOSE

The purpose of this document is to provide the reader with: A general understanding of change, communication, and diffusion processes; a series of principles and strategies that can be utilized in planning and implementing change; a set of guidelines and strategies for managing unique change situations that may face him.

METHOD

The material is synthesized from the existing literature on the subject.

FINDINGS AND CONCLUSIONS

1. A set of communication principles is set forth in terms of the significant variables, as follows:

(*a*) Source:
   (1) The communication is more likely to be favorably received if the source is credible, the receiver needs specialized information not at his disposal, the source is emphatic, the source and the receiver are homogeneous.
   (2) Communication is more likely to be unfavorably received if the source arouses anger or resentment in the receiver.

(*b*) Channel:
   (1) Mass media are more effective than interpersonal channels in creating awareness of ideas and in changing lightly held attitudes and beliefs.
   (2) Interpersonal channels are more effective in persuading and in changing deeply held attitudes and beliefs; they induce more lasting changes in attitudes than mass media do.

(*c*) Message:
   (1) If people know in advance that they are going to receive bad news, the emotional response to the message will be diminished.
   (2) The message which arouses anxiety tends to be ignored.
   (3) If your audience is ultimately going to be exposed to counterpropaganda, it is good strategy to present both sides of the issue at the outset.
   (4) It is effective to present the major arguments in the message at the outset.
   (5) To enhance message effectiveness, appeal to more than one of the senses.

(*d*) Receiver:
   (1) The receiver who values membership in the group tends to be conforming in his opinion and is influenced highly by messages from other group members.
   (2) Receivers with high prestige and popularity hold attitudes that conform with prevailing group norms.
   (3) Receivers with low self-esteem are persuaded more easily than those with high self-esteem.
   (4) Receivers who are hostile and aggressive in interpersonal relationships do not respond readily to persuasive communication; receivers who display social withdrawal are equally unresponsive.
   (5) Communication is more effective when it is receiver oriented rather than source oriented.
   (6) Receivers tend to be more receptive to communciation when they have a sense of participation and when the message is consistent with their existing knowledge, attitudes, and beliefs.

(*e*) Situation:
   (1) Rumors spread rapidly in time of stress and uncertainty.
   (2) In formal organizations, communication tends to be horizontal rather than vertical; such vertical communication

as occurs, flows downward; only positive messages flow upward.

(3) Change information is likely to spread more rapidly through informal than through formal channels in an organizational setting; formal communications confirm what has already been diffused informally.

2. The following diffusion principles are offered:

(*a*) Innovation:
  (1) An innovation is adopted more rapidly during a period of crisis.
  (2) Factors which contribute to the rate of adoption of an innovation include: Perceived advantage; compatibility; lack of complexity; suitability for trial adoption; communicability; visibility.

(*b*) Adopters:
  (1) The more traditional the social system, the more resistant to innovation will be the individual within the system.
  (2) Early adopters have the following characteristics when compared with later adopters: Younger; higher social status; more likely to use communication channels close to the source of the innovation; more active information seekers; more cosmopolite; have more opinion leadership; wealthier; less dogmatic; have more formal education; have greater ability to deal with abstractions.
  (3) Individuals more fully embrace innovations and change when they feel they have participated in planning and decisionmaking concerning these ideas.

(*c*) Communication channels:
  (1) Interpersonal communication from peers is more important for later adopters than for early adopters.
  (2) Interpersonal communication from peers is more important in uncertain (or high risk) situations than in clear-cut situations.

(*d*) Social systems:
  (1) In modern systems, opinion leaders are often innovators; not so in traditional systems.
  (2) In modern systems, diffusion flows between heterogeneous sources and receivers; in traditional systems, source and receiver tend to be homogeneous.
  (3) Members of a modern system are more closely related in interpersonal communication channels than are members of a traditional system.

(*e*) Change agents:
  (1) The efforts of a change agent speed the adoption of an innovation.
  (2) Change agents communicate most effectively with clients who are most like them.

3. The steps one can take in managing the change process are set forth:

(*a*) Define the objectives for specific change.
(*b*) Investigate alternative innovations.
(*c*) Define, distinguish, and analyze the target, decision, and adoption audiences.
(*d*) Define the steps that must be taken with each of these audiences to reach a decision, secure adoption, and achieve objectives of change.
(*e*) Select and employ those communication and diffusion principles most relevant to the specific change situation and develop change strategies to achieve previously defined objectives.
(*f*) Plan to integrate the innovation in the ongoing system.
(*g*) Evaluate the effects of the change.
(*h*) Diffuse your findings.

Comment by Reviewer

This pamphlet was prepared by the authors in their capacity as consultants to Operation PEP: a statewide project to prepare educational planners for California. As is evident from the foregoing summary, most of the content is drawn from other sources (including the Rogers material on diffusion). The value of this document lies primarily in the skill with which the points are synthesized and presented in simple handbook style.

RESEARCH IMPACT
ON PRIVATE PRACTICE
EMPIRICAL STUDY

Rose, M., and Esser, M. A. The impact of recent research developments on private practice. *American Journal of Psychiatry*, November 1960, 117, 429–433.

PURPOSE

To study the actual therapeutic methods used by psychiatrists in the treatment of various common mental disorders in order to obtain information about the theoretical convictions of psychiatrists and the way in which these convictions influence actual treatment methods.

METHOD

A total of 25 practicing psychiatrists were interviewed. The sample was chosen at random and represented about 50 percent of the practicing psychiatrists in the San Francisco midpeninsula area at the time.

The article also includes additional interpretation by J. M. Cotton, M.D., at the end of the report.

FINDINGS AND CONCLUSIONS

1. Although the psychiatrists were primarily psychologically oriented, they judged physical and pharmacological methods useful, and actually relied quite heavily upon them in daily practice.

2. Both psychotherapy and drugs were used by all of them, in varying proportions depending on individual taste and judgment, and largely symptomatically. The most common indication for the use of drugs was the severity of symptoms.

3. As a group, the psychiatrists were aware of, and respectful of, recent developments in physiological and pharmacological aspects of psychiatry, but they were not motivated to exert more than casual effort to learn about the basic concepts and hypotheses involved.

4. Their first concern is for the development of knowledge in the behavioral sciences as these are related to psychiatry: Psychodynamics, sociology, anthropology, etc. Of secondary but serious interest was the continuation of research in the physiology of the nervous system and related organs.

5. The relation between a psychiatrist's theory and his actual use of various therapeutic methods is not as simple and scientifically justifiable as one could wish.

Discussion by Dr. Cotton

1. The impact of recent developments in neurophysiological research upon private practice has been very small.

2. The standard pattern appears to be one in which the therapy is primarily psychotherapy of an opportunistic variety styled to fit the individual needs of the patient as intuitively perceived by the therapist.

3. If the psychiatrist were limited to providing services upon a strict basis of proven scientific fact, he would not be able to do anything for 95 percent of those who sought his help.

Comment by Reviewer

The study serves as a useful reminder of the nonscientific basis of psychiatric practice. That much of existing practice in the field of mental health does not have an established basis in scientific fact may be an important factor to consider in the application of findings about research utilization developed from studies in other areas. The fact that a suggested change in practice is based on research findings may carry less weight for mental health practitioners than it might in another field having stronger foundations in research.

Also of possible relevance to research utilization is the finding in this study that the psychiatrists relied heavily on pharmacological methods even though they recognized that this practice was often in direct conflict with their theoretical framework. This might suggest that when the results of an innovation are clearly visible, as in the case of drug therapy, the fact that it may conflict with professional values and attitudes (as prescribed by one's theoretical orientation) does not represent a major barrier to acceptance of the innovation.

RESEARCH UTILIZATION SURVEY

Rosenblatt, Aaron. The practitioner's use and evaluation of research. *Social Work*, 1968, 13, 53–59.

PURPOSE

The study reported herein was designed to ascertain social workers' ratings of the usefulness of research and the extent to which they use research findings in clinical practice.

METHOD

Sample

Four different groups of caseworkers were surveyed:

(1) First-year students at the Adelphi University of Social Work distributed questionnaires to staff members at the field placements.
(2) Two large social welfare agencies in New York City distributed the questionnaires to their employees.
(3) Questionnaires were mailed to members of the 1956 graduating class of Columbia University School of Social Work.
(4) Questionnaires were mailed to a random group of caseworkers listed in the current NASW membership directory.

The characteristics of the sample drawn from the 308 usable questionnaires returned were as follows: 82 men and 226 women, 204 caseworkers, and 103 supervisors, executives, and other specialists.* The average age was 39.6.

Study Design

Data about research utilization were collected in the following four areas:

(1) Use of research in handling difficult cases.
(2) General value of research findings for respondent's practice.
(3) The helpfulness of research in improving practice.
(4) The helpfulness of research courses in preparing for career.

The respondents were asked to compare reference to research with other practice activities including, discussion of cases with supervisor, discussion with a fellow worker, discussion with a friend who was also a professional, discussion with a consultant, and thought but no consultation. They were asked to compare these activities in the following contexts:

(1) A recently completed case in which some difficulties were encountered in deciding on a treatment plan.
(2) Additional activities they would have undertaken in handling the same case had they more time to develop a treatment plan.

In addition, the respondents were asked:

(1) The value of supervision, consultation, and research findings for their practice on an 11-point scale.
(2) To rank in order of importance eight experiences that contributed to the improvement of their practice. One of these experiences was reading research articles, another was reading practice articles.
(3) To recall which of eight courses included in their school training had been most helpful and least helpful in their careers. Research was one of the eight courses listed.

FINDINGS AND CONCLUSIONS

1. The author found that most practitioners undertook two or three activities before arriving at a treatment plan. Most often these were discussions involving their supervisor.

2. Although 29 percent of the respondents reported reading research articles, only 9 percent reported reading research articles in connection with specific cases.

3. Lack of time seems to be one reason that research is not utilized. Half of the respondents ranked their research courses as least helpful in current practice. Generally, research ranked least used and least useful of the activities compared in this study.

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*One respondent failed to identify his position.

4. The author offers the following possible explanation of and observations on the findings:

(a) Individuals entering the field of social work may have chosen this occupational avenue, feeling that they were not equal to the scientific rigor (statistics, etc.) required to become psychologists. Therefore, the field of social work may be populated with individuals who have built a negative bias concerning research.

(b) Research findings may not be especially valuable in practical problem solution.

(c) Practitioners focus on case studies, viewing each case as unique. The efforts of the researcher to establish generalizations runs counter to this approach.

(d) Researchers may have difficulty in translating clinical theories into operational terms that can be tested. Therefore, the theories upon which many practices are based remained untested.

(e) While researchers must maintain a questioning attitude toward their work, a constantly questioning practitioner may be less effective. The researcher cannot only undermine the confidence of the practitioner, he may also disturb the practitioner by making him the object of his study.

(f) The report of research findings is often slanted to meet the needs of the other researchers rather than those of the practitioner.

(g) There is a rather low level of scientific knowledge to support the practices of its clinicians.

Comment by Reviewer

The findings from this study indicate that interpersonal discussion might be the most effective way of feeding research information to practitioners. Interpersonal discussions with supervisors or consultants who are familiar with research results could not only make practitioners aware of relevant findings, but provide support for research utilization that written reports could never offer.

RESEARCH-PRACTICE INTERACTION
CASE ANALYSIS

Rosenfeld, J. M., and Orlinsky, N. The effects of research on practice: Research and decrease in noncontinuance. *Archives of General Psychiatry*, 1961, 5, 176–182.

PURPOSE

The authors describe changes in a service agency's functioning that occurred concurrently with a research program focused on these functions. In essence, the authors are issuing a warning to researchers about the interaction effects of research on practice.

METHOD

Since this was an almost after-the-fact study there were no specific methods set down. The authors describe the research program, the amount of staff participation in the research program, the initial awareness of the interaction effect, the selection of alternative criterion, and a refocusing on the changes in practice that occurred as a result of the initial research program.

FINDINGS AND CONCLUSIONS

1. The general research program dealt with personality factors associated with patient resistance to accepting recommended psychiatric treatment.

The original study focused on differences between patient and therapist perceptions of a therapeutic process and the effect of these differences on continuance or noncontinuance of treatment. The project as designed had no "action" program built into it, even though anyone familiar with research in a clinical setting would be prepared to anticipate the following:

(a) Any clinician doing research is never completely disinterested in service to patients.

(b) The activities of the researchers and the concomitant involvement of staff members, patients, and trainees in the project would have some affect on the clinic operations.

2. The whole staff to the psychiatric outpatient clinic of a general hospital participated in the project. The director of the clinic helped in the planning stages. The entire staff participated in a study of prediction of premature termination of psychotherapy from tape recordings of early therapy interviews. The intake staff helped revise forms directed toward facilitation of collection of data on noncontinuance.

3. There is little doubt that the sensitivity toward noncontinuance stimulated through the research project affected client-clinician contacts; however, interest and concern raised by the research project did not appear unusually high.

"The possibility that the research program and the functioning of the service might be affecting each other in significant ways was brought to the attention of the authors when discontinuance decreased to such an extent that it could no longer be used as a criterion measure."

4. The authors emphasize the following major findings:

(*a*) Noncontinuance decreased during the course of the research on noncontinuance.

(*b*) Other changes occurring during the research period included: (1) An increase in the number of interviews per patient; (2) improvement in the patient's concept of therapy; (3) more successful referrals of applicants to other services; and (4) a shifting of social worker comments at initial interviews from getting patient information and commenting on patient behavior to giving more information about clinical services and to correcting initial misconceptions about psychiatry.

5. The authors believe a substantial portion of change can be attributed to improvement of social workers' services and techniques, since caseload and clinic population did not change during the study. Evidently, the focus of the research and staff participation increased attention on the factors being studied. The increased awareness, in turn, led to behavior changes in the staff.

Comment by Reviewer

This article hints at some of the "dangers" that should be avoided when practitioners are included in the planning of the research. They become sensitive to the variables under observation.

PLANNED CHANGE

ANALYSIS AND SUGGESTIONS

Rubin, Louis J. Installing an innovation. In R. R. Goulet (Ed.), *Educational change: The reality and the promise.* New York: Citation Press, 1968, pp. 154–165.

PURPOSE

"Neither restlessness, tinkering, nor frenetic activity make for genuine improvement. Change and innovation must be ordered by informed judgment, by the fruits of sound reasoning, and by a clear sense of the way things are." In this article the author proposes a system for installing innovations in ongoing organizations.

METHOD

The author has based his analysis on his own knowledge, experiences, and observations.

FINDINGS AND CONCLUSIONS

1. There are several weak spots in the current art/science of innovation installation.

(*a*) Most innovations that can make an authentic difference tend to necessitate personnel training, a phenomenon about which too little is known.

(*b*) The invention of innovations does not always parallel the needs of the system.

(*c*) Little is known about the degree and kind of preparation that should precede the introduction of an innovation.

(*d*) Innovations often enjoy fad status. The spotlight is therefore focused only on a small number of related innovations rather than on the many and diverse innovations being put forth in different areas.

2. The change process consists of four phases: *Research*, *development*, *dissemination*, and *installation.*

3. Rubin hopes that schools will come to view innovation as a necessary but insufficient part of improvement. He asserts that "There must be a rational effort to capitalize on the new, but there must be an equally rational effort to search out the inadequate and to apply correctives, even if the correctives are 1, 5, or 10 years old."

4. Effective installation of an innovation involves three sequential phases: Preliminary analysis, strategy selection, and action.

(*a*) The *preliminary analysis* operation consists of four steps: Diagnosis of a weakness, analysis of the responsible factors, comparison of alternative correctives, and selection of the best corrective. This analysis serves several functions:

(1) It creates a bridge between the introduction of an innovation and the improvement or change in the system.

(2) It yields clues for the strategy selection and action operation.

(3) It provides a partial basis for determining which of the available innovations is most appropriate for prevailing conditions.

(*b*) The *selection of strategy* is based on consideration of the kind of innovation being installed, the characteristics of the organization or target environment, and the individual engineering the change.

(*c*) The *action* phase requires seven steps:

(1) Analyze the training, materials, and linkage requirements necessary to incorporate the innovation into the existing system. The staff must understand the innovation, its requirements, and its relation to the school's objectives.

(2) Initiate motivating pressures through inducing dissatisfaction and illuminating rewards. The benefits of the innovation must be clear.

(3) Initiate the influence strategy. Specific strategies must be used to induce the staff to accept the innovation.

(4) Initiate preparatory activities. A "getting ready" program must be provided.

(5) Introduce the innovation.

(6) Support the transition from old to new. Various kinds of support must be provided in order to prevent premature or transitional failure.

(7) Link the innovation to the permanent system; the innovation must be tied to the overall program.

Comment by Reviewer

Rubin's process for installation of innovations reflects the classic medical model (study, diagnosis, treatment) found in much of the literature on planned change. Rubin differs from other authors in that he omits the phase of "felt need." However, his views regarding the function of educational change imply that installation of innovations should follow evaluation and identification of areas of need.

DIFFUSION
SURVEY

Ryan, B., and Gross, N.C. The diffusion of hybrid seed corn in two Iowa communities. *Rural Sociology*, 1943, 8, 15–24.

PURPOSE

This study was designed to trace the diffusion pattern of an innovation (hybrid seed corn) among farmers.

METHOD

The authors interviewed "practically all of the farm operators" dependent on two rural town centers in Iowa. Included in the sample were 323 farmers.

FINDINGS AND CONCLUSIONS

1. Noting that the adoption of this corn variety required few changes in routine and farming equipment, the authors found that it still took roughly 5 years for the first adoptions to occur after the farmers had their first knowledge of the product. After initial adoption by a few farmers there was an increasing acceptance rate among other farmers.

2. The authors point out that those farmers who tried the innovation first insisted upon personal experimentation before complete acceptance, but that this experimentation period shortened considerably for later adopters.

3. Almost one-half of the farmers interviewed cited personal contact with salesmen as the earliest source of information, while an additional 10 named radio advertising. About 15 percent named neighbors and another 11 percent named farm journals as their original source of information. Farmers who heard of hybrid seed corn late in the game were more apt to hear from neighbors.

4. There appeared to be two forces at work: Introductory mechanisms and activating agents. While professional salesmen served the introductory function, neighbors were the most influential in activating the adoption of the hybrid corn.

Comment by Reviewer

The differentiation of the informational and persuasive functions in the adoption process was a contribution of this very early study on diffusion. Certain sources are best for creating awareness while others are more important for persuading individuals to adopt ideas. The mass media, or the professional agent is useful for creating knowledge and awareness. Colleagues and credible individuals are most useful in persuading individuals to adopt new ideas (use research).

ORGANIZATIONAL FACTORS AND INNOVATION
SURVEY

Sapolsky, Harvey M. Organizational structure and innovation. *Journal of Business*, 1967, 40, 594–610.

PURPOSE

Sapolsky's investigation was directed toward differentiating between organizational and individual innovation.

METHOD

Sample

Using department stores as a focal point for his study, Sapolsky examines the innovation experience of nine of the most innovative* firms in the East and Midwest.

Data

The main source of data for the study was a series of open-ended interviews conducted in 1965–66 with management personnel of these organizations. One of the main objectives was to determine the origins of proposals for organizational changes. A general interview guide was followed throughout the fieldwork.

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*The basis for selection of these innovative firms is no more specific in the original article.

The innovations studied were: (1) The separation of buying and selling function; (2) use of electronic data processing in merchandise operations; and (3) use of decisionmaking techniques such as PERT and operations research to merchandise problems.

Background Theory

Factors that increase the probability that organizational participants will devise and present innovation proposals are precisely those factors that decrease the probability that the organization will adopt the proposals. The stimulation of potential innovation is distinct from and even antagonistic to the stimulation of the adoption of the innovation. The diversity of an organization's incentive and task structure affect the rates at which an organization will generate and adopt innovations. Diversity affects all three stages of organizational change—the conception of possible change, the proposal of change, and the adoption of change.

Hypotheses

1. The greater the diversity of the organization the greater the probability that members will conceive and propose major innovations.

2. The greater the diversity of the organization, the smaller the proportion of major innovations that will be adopted.

FINDINGS AND CONCLUSIONS

1. The author found that the innovations studied were highly interrelated, and that the adoption of one might be expected to lead to or facilitate the adoption of others.

2. The proposals of the changes originated with, and were supported by, personnel in similar positions in each of the stores. These were the store controllers who were found to have close relationships with controllers in other firms. These controllers often met at professional conferences of controllers and prestige went to the controllers who had gained the greatest participation in store management and who had applied the newest techniques.

3. The innovation proposals had not been widely implemented. While differences in internal politics, personalities, and expectation of innovational costs and benefits led to somewhat different results in each firm examined, a general pattern of presentation, experimentation, and frustration related to structural arrangements can be discerned.

4. The decentralized structure of the department store is viewed as a major barrier to the institution of the change. The author sees the tactics that facilitate initial application to be in conflict with diffusion within the same organization, citing the fact that interunit communication is usually so good within an organization that tactics used with one sector are likely to be spread in other departments, in many cases developing rather than overcoming the resistance factor. The author concludes that the diffusion of innovation becomes difficult, expensive, and sometimes, impossible, in firms composed of a large number of equals who demand equal treatment.

5. Sapolsky felt that the data from the department stores supported the hypotheses concerning diversity and innovation.

Comment by Reviewer

This article supports continued separation of research and practice. Research is often responsible for innovative ideas. It is often somewhat removed from adopters.

This author's findings also suggest that when several like departments view themselves as being in competition, that demonstration projects set up in one of these departments are likely to induce resistance to adoption rather than facilitate it. This may not hold true in organizations where financial incentives play a relatively minor role.

KNOWLEDGE UTILIZATION
ANALYSIS AND SUGGESTIONS

Schmuck, Richard. Social psychological factors in knowledge utilization. In T. L. Eidell and J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968, pp. 143–173.

PURPOSE

A theoretical analysis of problems of knowledge utilization in education, and suggested programs for facilitating research utilization.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. *The social relationships between the behavioral science researchers and the administration impedes utilization in three ways:*

(*a*) The in-group, out-group phenomenon found in studies of prejudice often characterized such a relationship.
(*b*) The developing stereotypes are reinforced by lack of communication and hostility is increased by challenge of each other's intelligence and status.
(*c*) Vicious cycles involving inadequacy and withdrawal as well as hostility and resistance can characterize the researcher-administrator relationship.

2. *Along with these difficulties in interpersonal relations there are a cluster of four detrimental psychological processes:*

(*a*) Both parties collectively perceive aspects of the other's behavior to the detriment of the relationship.
(*b*) Distortions of memory, especially concerning the feelings of the other, characterize the relationship.
(*c*) There is a tendency to place low value on each other's work.
(*d*) The possibilities of collaboration may seriously threaten the self-concepts of both.

3. *For administrators, internal psychological linkages between knowledge and practice are made difficult by:*

(*a*) Role expectations others hold for him.
(*b*) His own division between the role of administrator and the role of learner.
(*c*) The lack of clear operational goals.
(*d*) His lack of motivation to try something new.
(*e*) Presentations of the research knowledge in strictly verbal ways and in moderately threatening surroundings.

4. *There are 10 social psychological assumptions that must be considered in planning action to facilitate research utilization.*

(*a*) There must be trust, openness, and attraction between the administrator and the behavioral scientist if there is to be effective communication.
(*b*) Cooperation activity should be structured so that each will benefit directly from it.
(*c*) At the start of any collaboration, there should be a discussion of the forces which might inhibit either side's participation. A public discussion of restraining forces and how they might be overcome is important in unfreezing both parties.
(*d*) The superordinant goals that transcend subcultural differences should be discussed and agreed upon by researcher and administrator.
(*e*) The administrator's values and goals should be sharpened and more clearly defined during the knowledge utilization process.
(*f*) An operational statement of goals should be encouraged along with measurement. The first practice in using research should

be through simulating; next should be through fantasying behavior; next should be through feedback from tryouts and subsequent action on feedback.

(*g*) Following simulation, actual tryouts should be encouraged with support from a seminar group of other administrators.

(*h*) Because of a reciprocal role involvement, it may be necessary for the entire school staff to be involved in learning how to handle the change.

(*i*) The administrator should receive training on how to give and receive feedback.

(*j*) The administrator should receive training in flexibility and open mindedness.

5. *The following 10 stages should be present in the design of a training program for the development of an individual administrator:*

(*a*) There would be some sort of T-group experience to help administrators become more reflective about their own behavior and to impress upon them that their behavior, and not thoughts and values, affects the feelings and reactions of those who work with them.

(*b*) Behavioral science knowledge relating to some aspect of administrative practice would be presented, discussed, and its use set up as an important objective.

(*c*) Administrators would become acquainted with diagnostic skills related to their domain of behavioral science. For example, an administrator could be taught how to measure the effects of his leadership behavior.

(*d*) Brainstorming fantasy sessions would be used to help each administrator think through specific ways in which he could behave in attempting to implement given research findings.

(*e*) Various role-playing scenes would be used to try out practices and to get immediate feedback.

(*f*) Skills in giving, receiving, and using feedback would be discussed.

(*g*) Administrators next would be asked to make commitments to try out some of these practices in their school settings. Analysis would be used to identify facilitating and restraining forces in their situations. In order to maximize commitment, the administrator would record on tape the thoughts he has about the practices he will try in his administrative role.

(*h*) At a later session the tape would be played back; if the commitment was unrealistic, changes can be made.

(*i*) The administrator would use a questionnaire and collect verbal feedback on the effects of his practice.

(*j*) During the period of trial group discussions would be held with fellow administrators.

6. *The next design concerns eight stages for modifying the faculty's expectations and pressures that support the status quo.*

(*a*) An organization training experience involving the entire faculty would come early in the program to help them open up to more analytical, skillful, and interpersonal relationships, etc.

(*b*) Behavioral science knowledge on school staff processes would be presented and discussed.

(*c*) Diagnostic skills from the domain of behavioral science would be discussed and the group would learn more about group processes; for example, decisionmaking.

(*d*) Brainstorming would lead to suggestions for specific changes in staff procedures.

(*e*) There would be a trial by all the staff of the new procedures with a panel observing the trial in action and giving feedback.

(*f*) In connection with the above, skills in giving, receiving, and using feedback would be provided.

(*g*) After the trial period the staff would be asked to make comments to continue the most effective new procedures.

(*h*) A panel of staff members would continue to collect data about the effects of the new procedures.

Comment by Reviewer

The author's plan for training administrators and staff to be more receptive to research is psychologically sound.

HOW TO WRITE A RESEARCH REPORT
SUGGESTIONS

Schoenfeld, Clarence A. Communicating research findings. *Journal of Educational Research*, 1965, 59(1), 13–16.

PURPOSE

The author feels that the poor quality of written research reports is a primary factor in the communication breakdown between researcher and user. This article offers some suggestions and guidelines for upgrading the quality of the written research report, in the hope that better lines of communication between researcher and user can be established.

METHOD

The ideas in this article are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. In preparing the research report, the researcher must consider the relevance of the content to the larger field of inquiry or practice.

2. The subject should be reduceable to one paragraph.

3. The audience for whom the information is relevant should be carefully delineated and then in accordance with his audience analysis, the medium, occasion, etc., for the appearance of the article should be determined.

4. IDEAS is the key word for the writer to keep in mind.

*I*ntroduce.	Make audience aware and interested.
*D*emonstrate.	Show some connection between the reader and message.
*E*xplain.	
*A*pply.	Give practical examples, suggested applications.
*S*ummarize.	What ideas mean to the intended audience.

Comment by Reviewer

A very general "how to" article. The article is of primary interest for the researcher.

RESEARCH UTILIZATION
ANALYSIS

Schwartz, David C. On the growing popularization of social science: The expanding publics and problems of social science utilization. *American Behavioral Scientist*, 1966, 9(10), 47–50.

PURPOSE

To analyze the problem of social science utilization and to suggest a means of improvement.

METHOD

The article is analytical in nature and based on the author's knowledge and experience.

FINDINGS AND CONCLUSIONS

1. The effective utilization of social science research will increase when more efforts are made to generalize the findings to more and broader publics, and when researchers make better attempts to communicate with a variety of audiences, simultaneously at several different levels of sophistication.

2. Three publics for research findings are defined: (*a*) *The scientific community*, (*b*) *social action professionals and volunteers*, such as social workers, public health officials, etc., and (*c*) *students*.

3. The problems of utilization stem primarily from sins of omission and commission.

(*a*) *Sins of omission* are those resulting from the communication gaps between researcher and user. Relevant information doesn't get to the audiences that could make use of it.

(*b*) *Sins of commission* are those resulting from errors of fact and/or misinterpretation. Incautious generalization of findings beyond observed limits, bounds, and domains of discovered relationships can lead to program failures which in turn can cause negative backwash when the policies so based fail.

4. *The Popularizer Role.*—The solution to a communication problem between researcher and practitioner is the development of a popularizer (knowledge linker) role. Such an individual would be "trained as and by social scientists and employed by various publics." Such an individual could serve as a crucial, continuing communication link. It would be a difficult role to fill. The author stresses the importance of topnotch training for such individuals to guard against further sins of commission.

Comment by Reviewer

This article lends support to the importance of establishing a linkage role between researcher and practitioner. The article is also significant in terms of drawing attention to the "sins of commission" in the dissemination of research findings. Thus, effective utilization of research depends not only on the quantity of communication of findings, but also on the accuracy or quality of these communications. This may be of particular importance to the field of mental health, where practitioners appear to rely primarily on face-to-face verbal communication in the dissemination of new knowledge.

RESEARCH UTILIZATION
ANALYSIS-CASE STUDY

Shartle, Carroll L. The occupational research program: An example of research utilization. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, vol 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961, pp. 59–72.

PURPOSE

The author describes the occupation research program as an example of research utilization and then explores some of the major factors related to utilization.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

The most enlightening part of this article is the author's discussion of the factors that facilitated utilization of research findings.

(1) *Dual responsibilities of the researcher.*—The researcher unit was given responsibility for both development and application.

(2) *Developing informal relationships with operating people and filtering technical people into operating offices.*—Research and utilization personnel from the project were filtered into related agencies to provide assistance with products and materials resulting from the occupational research program.

(3) *Institutionalizing the change agent role.*—Individuals who essentially functioned in a change agent role were placed in regional offices to give assistance. Their efforts were directed mainly toward persuasion.

(4) *Research participation by lay persons who later aided in utilization.*—Individuals involved in the planning of the program were convinced of the importance of research and its potential value in the operating picture. They were able to facilitate utilization through influencing decisions in the operational context.

(5) *Formal inservice training.*—Training ses-

sions incorporating previously planned teaching aids and practical exercises proved invaluable in facilitating research utilization.

(6) *Required use.*—One of the most effective means to insure utilization of materials produced by behavioral science research is to require their use and to give credit for such use.

(7) *Format and content of research product must be appropriate.*—Research findings and products must be available in usable form, otherwise application and utilization will be limited.

These were the factors that the author felt most influential in securing research utilization during the 20-year operation of the occupation research program.

Comment by Reviewer

The factors outlined by the author are certainly worthy of consideration in devising strategies for facilitating and securing use of research findings. They worked at least in this program.

ORGANIZATIONAL FACTORS AND INNOVATION

ANALYSIS

Sieber, Sam D. Organizational influences on innovative roles. In T. L. Eidell and J. M. Kitchell (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968, pp. 120–142.

PURPOSE

The author identifies four features of our public education system which distinguish education from medical practice, industry, and agriculture, and thus affect the applicability of diffusion research in these fields to education. The implications of these features for diffusion and innovation are discussed and suggestions made for strategies of change.

METHOD

The paper is based on the knowledge and insight of the author, who is Project Director, Bureau of Applied Social Research, Columbia University.

FINDINGS AND CONCLUSIONS

1. Sieber identifies these four distinguishing features of educational structures: Vulnerability to the social environment; the professional self-image and associated values of educational personnel; the diffuseness of educational goals; and the need for coordination and control of the primary clientele as well as of the employees of the system.

(*a*) *Vulnerability*—the degree to which an organization is subject to powerful influences from its environment irrespective of organizational goals and resources. The vulnerability of school systems has several implications for innovation:

  (1) Changes in practice that might disturb the local community are shunned.

  (2) The adoption of innovation often depends more upon political feasibility than educational value.

  (3) Innovations receiving wide publicity through the mass media become candidates for adoption, irrespective of their educational value.

  (4) Internal relationships of a vulnerable system may be affected so as to reduce serious experimentation.

(*b*) *Quasi-professionalism*—Certain attributes of the teaching force, such as amount of training, distinguish this occupation from recognized professional groups and result in a discrepancy between the aspirations of teachers and occupational reality.

  (1) The insecure professional self-image of teachers increases resistance to

change and mitigates against communication of innovation.

  - (2) Status insecurity can also cause "ritualism," or excessive regard with means to the neglect of ends or goals.

- (*c*) *Goal diffuseness*—Terminal goals of education and measurement of their attainment are difficult to specify, especially the long-range socialization goals.
  - (1) This diffuseness reinforces the effects of status insecurity and vulnerability on innovation.
  - (2) Difficulties in measuring the attainment of goals makes it hard to reach consensus regarding the efficacy of particular skills.
- (*d*) *Formal coordination and control*—The bureaucratic structure of educational institutions causes strain for the professional roles and reinforces the effects of quasi-professionalism. Also, the emphasis on organizational efficiency tends to result in an avoidance of changes that require adjustment of the organizational structure, especially if they threaten the traditional methods of coordination and control.

2. *Strategies of Change.*—Three classical strategies for inducing educational change are identified:

- (*a*) *The rational man strategy*, in which one-way communication is adequate since information is considered the major need of practitioners. This strategy fails to consider the four aspects of the educational system discussed above.
- (*b*) *The cooperator strategy*, which involves the participation of members of the system. This strategy overemphasizes the personalistic aspects, resulting in a tendency to view resistance to change in schools as a function of individual characteristics rather than a matter of status insecurity, peer group pressures, or bureaucratic hindrances.
- (*c*) *The powerless participant strategy*, which assumes that practitioners are unable to make major changes in the educational structure, and energies are directed through legal and bureaucratic channels, "with directives flowing downward and evidence of compliance flowing upward." That practitioners are not powerless is often demonstrated through subversion of formal directives based on this strategy.

3. A *status-occupant* strategy of change is needed which takes into account the distinctive characteristics of educational structures and takes into account the conditions under which practitioners will respond to the tactics applied in each of the three traditional strategies. The image of practitioners as status occupants assumes that "they are imbedded in an intricate network of role relationships that holds its shape as a consequence of shared values, shared solutions to status problems, and shared sanctions for deviance and conformity" (p. 139).

4. *Implications for Strategy.*—Reorganization appears necessary at both the local and national levels.

- (*a*) At the local level, school systems should be structured so as to allow teachers to act in accordance with their professional aspirations. For example, a teacher might be authorized by the school board to try out a new development in which he is interested. After obtaining board approval the teacher would be given special funds, released from routine teaching duties, and authorized to modify regulations, reallocate resources, reassign students, and dole out rewards and penalties for those within his jurisdiction for a specific period of time. The relationship of local administrators to these teachers would be restricted to that of facilitation and consultation.
- (*b*) Beyond the local level, it may be necessary to organize agencies representing several national ancillary structures (Federal and State offices, publishing houses, accreditation agencies, universities, and the mass media) that would serve as coordinating bodies in order to avert the problems arising from local and regional vulnerability and would capitalize on national vulnerability to better advantage. By having each national coordinating body focus on one innovation at a time, resources and tactics would be mobilized for more effec-

tive and thorough efforts that could draw from a combination of all three classical strategies of educational change.

Comment by Reviewer

This paper serves as an excellent reminder of the need to exercise discriminatory caution in relating findings of diffusion research from one field to another. Several of Sieber's points about the distinctive aspects of education appear applicable to the field of mental health although perhaps in different degrees or forms. For example, although the characteristic of quasi-professionalism is not as prevalent in mental health as in education, the related factor of status insecurity has been observed by this reviewer to emerge in some mental health settings utilizing a multidisciplinary approach.

Mental health structures do not seem to be as highly vulnerable to external pressures as education systems, but the field is by no means immune, particularly in terms of Federal and State influences.

Goal diffuseness is probably as significant to innovation and diffusion in mental health as in education and the author's discussion of the effects of this factor is highly pertinent.

The factors related to the aspect of formal coordination and control would appear applicable to larger, more bureaucratic mental health organizations, but would be of less significance to the smaller agencies.

DISSEMINATION
DEMONSTRATION STUDY

Smith, R. L., Hawkenshire, F., Lippitt, R. O. *Work orientations of teenagers.* Ann Arbor, Mich.: Institute for Social Research, University of Michigan, 1969. (Report for contract No. OE 5-85-067 for project No. 5-0118.)

PURPOSE

The study was undertaken to test a variety of dissemination activities in order to help sharpen an appreciation of the critical issues involved in the utilization process—particularly as they relate to the findings of social research.

METHOD

The study was carried out in school settings and was focused on two questions: What do youth think, feel and do about work and play and why? How can we change what the marginal student thinks, feels, and does about learning? To provide data for the first question, approximately 1,200 teenagers were interviewed in eight Detroit area public schools and three Michigan juvenile institutions. These findings were disseminated and answers to the second question sought through three dissemination projects: (1) An hour-long faculty meeting (at a high school) at which the findings were presented, there was opportunity for participant reflection and feedback, postmeeting reactions were summarized and circulated to participants, and a 6-week followup questionnaire was distributed; (2) a 4-hour retreat-type workshop which enabled participants to be at their school fulfilling their regular obligations at beginning and end of day, with essentially the same format followed as in (1), above, except that there was more ample opportunity for small-group participation, there was more emphasis on the participants actually designing a program to meet some of the issues raised, and the researchers, to a limited extent, provided consultative aid in the followup period; (3) an 8-hour session (divided into two parts) with the preceding format elaborated to permit more intensive and systematic program development, critical review by other participants, and interchange with a group of young persons typical of those who would ultimately be recipients of such programs. Relative efficacy of the three activities are analyzed and compared.

FINDINGS AND CONCLUSIONS

1. The major barriers to knowledge utilization are identified as:

(*a*) Psychological resistance (fear of the new, reflection on one's competence, etc.).

(*b*) Sociological resistance (challenge to status within system).
(*c*) Ecological resistance (shortage of manpower, space, other resources).
(*d*) Economic resistance (costs of retooling for innovation).
(*e*) Political resistance (changes of balance of power within system).

2. The evaluation of the dissemination activities carried out in this study is presented in terms of the following dimensions:

(*a*) *Content:*
  (1) The appropriate unit for dissemination should be the fully developed program rather than the basic findings and their implication.
  (2) All aspects of the program should be thoroughly covered.
  (3) Implementation issues raised by the nature of the program should be dealt with exhaustively.
  (4) Findings from research should not be presented per se but be selected and interpreted within the context of clarification and illustration.
(*b*) *Participants:*
  (1) Dissemination materials should be designed to be directly aimed at those specific persons in the system who will be most involved in the program and who will be called upon to develop new skills and perspectives.
  (2) Different materials should be prepared for those with different roles and responsibilities.
(*c*) *Format:*
  (1) Of the three settings tested in this study, the optimum was the 4-hour workshop (2), which removed people from their usual routine but did not require demanding travel and inconvenient absence from work.
  (2) There should be built-in checks to validate the pacing of the information and the set of the participants.
  (3) Process checking should be discreet and should not dislocate content dissemination and discussion.
(*d*) *Implementation of objectives.*—The implementation will have the best chances of success if those undergoing skill training are made aware of the links between what they are being required to master and what they already know.

Comment by Reviewer

The study as described is extremely interesting and potentially useful, although the conclusions reported do not seem to make full use of the findings. For example, in view of the detailed description of the three different dissemination activities, one is disappointed not to have comparative data presented more fully.

Although many of the conclusions might be viewed as being as applicable to mental health as to education, the suggestion that fully developed programs (rather than findings) be disseminated would seem to preclude the involvement of those affected by a change in shaping the direction of that change.

RESISTANCE TO CHANGE CASEBOOK

Spicer, Edward H. (Ed.) *Human problems in technological change: A casebook.* New York: Russell Sage Foundation, 1952.

PURPOSE

To demonstrate, through the use of case examples, the factors related to the success and failure of cross-cultural change efforts. The book also presents guidelines for the study and analysis of the effects of technological innovation.

METHOD

Each of the cases presented in this collection offers an example of an effort to bring about change in a culture. Both successful and unsuccessful attempts are included. An analysis of each case is provided.

FINDINGS AND CONCLUSIONS

The following ideas are the most relevant to research utilization:

(1) Resistance is not necessarily a condition of change. Resistance to change may be a symptom of something wrong in the particular situation. It could indicate a real impracticality of the proposed change or suggest unsatisfactory relations between the change agent and the organization.

(2) Once resistance is seen as a symptom of special conditions rather than as a constant element, it becomes possible to discover causes of success and failure of change efforts through the study of cases in which resistance appears. The following generalizations are supported by case study:
  (a) People resist changes which threaten basic security.
  (b) They resist proposed changes that they do not understand.
  (c) They resist being forced to change.

(3) A list of questions constituting a master checklist which might be used for gathering information on proposed change in a wide variety of situations is given. Answering these questions should facilitate change efforts:*
  (a) What, if anything, will the introduced procedure or method replace?
  (*b*) What other elements in the system are likely to be modified as a result of the introduction?
  (*c*) What other elements will have to be modified if the new procedure is accepted?
  (*d*) What other new procedures, etc., are likely to be demanded as a result of the situation?
  (*e*) Who in the institution will have to abandon or change his occupation if there is a change introduction?
  (*f*) Who in the institution will immediately benefit from the introduction? Will the benefits be in economic advantage, prestige or what?
  (*g*) Who is likely to suffer immediately, in what way?
  (*h*) Will shifts in occupation affect the division of labor between professional groups?
  (*i*) What are the formal and informal social organizations of those affected?
  (*j*) How are these social organizations likely to be affected? Will their power or social position be enhanced or lowered?
  (*k*) Is there a possibility of the introduction opening up new forms of cooperation? Of conflict?
  (*l*) Do the individuals and group leaders affected understand the nature of the introduction?
  (*m*) Who has participated in the planning of the change? Who has not participated?
  (*n*) What elements of the system other than the particular introduction are likely to be affected? For example, will personnel changes be required, differences in training programs?
  (*o*) Does the proposed change reinforce other components of the system or conflict with them?
  (*p*) What are the attitudes toward the innovator as a person? Toward the professional group or other groups of which he is a member? To his affiliations in general?
  (*q*) What is the recent history of the relations between the change agent or the group introducing the new procedure and the practitioners in the institution?
  (*r*) What is the history of similar previous introductions to this group?

(4) Several recurrent groups of problems are identified for use in diagnosing or analyzing situations and as a basis for developing principles for solving human problems:
  (*a*) *Problems of cultural linkage* emerge because of failure to understand the connection between certain beliefs and customs.
  (*b*) *Problems of social structure* arise from failure to work through existing

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***Some questions have been paraphrased to make them more relevant to mental health.**

social organizations or from miscalculation as to what the functioning social units are.

- (*c*) *Problems of the role of the innovator* may develop from poor relations between the people of the different cultures involved, or from misunderstanding or poor definition of the role of the innovator.
- (*d*) *Problems of cultural bias* may arise from interpreting behavior in one culture in terms of another culture.
- (*e*) *Problems of participation* are due to failure to bring people into the planning and carrying out of a program of change.
- (*f*) *Problems of buffer organization* may develop from any of the above problems and result in the organized resistance to change by the members of the system involved.

Comment by Reviewer

Acceptance of change is given an emphasis that it lacks in most other discussions which tend to focus on resistance to change. The checklist is a good one and would appear of value to both administrators and consultants.

RESEARCH UTILIZATION DEMONSTRATION

Spooner, S. E. and Thrush, R. S. *Interagency cooperation and institutional change.* Final Report on a special manpower project prepared under a contract with the Manpower Administration, U.S. Department of Labor. Madison, Wisconsin: University of Wisconsin, 1970.

PURPOSE

The purpose of the demonstration was to test techniques for the effective dissemination of meaningful findings of a research project. The focus was less on having the research results explicitly utilized than on having the dissemination efforts stimulate institutional change.

METHOD

The research project selected as the base for the demonstration was a DOL-funded Mental Health and Manpower Project at Fort Logan Hospital in Denver, Colorado, through which supportive techniques were employed to assist released mental patients in getting and retaining employment. To disseminate the results of this project, a three-day conference was held in Madison in October 1969; participants were selected from the six states of Region V, and included representatives of 17 mental hospital centers in these states and from Employment Service and Vocational Rehabilitation Service. Project staff from Fort Logan served as resource personnel. Conferees were encouraged to formulate specific implementation plans for adoption or adaptation of the Fort Logan findings. Subsequently, the University of Wisconsin functioned as follow-up agent for several months; in personal contacts and by telephone they offered assistance and encouragement to the state teams in carrying through their implementation plans. Results were informally evaluated.

FINDINGS AND CONCLUSIONS

1. The implementation plans developed at the conference included:

- (*a*) Cooperative interagency activities
  - (1) Sharing staff
  - (2) Interagency meetings
- (*b*) Staff educational efforts
  - (1) Training staff
  - (2) Information transfer
- (*c*) Patient educational efforts
- (*d*) Post-hospital activities
  - (1) Sheltered workshops and lodges
  - (2) Placement and follow-up
  - (3) Use of community resources
- (*e*) Miscellaneous
  - (1) State support
  - (2) Patient definition
  - (3) Proposals for funding

2. No specific findings are reported with respect to results in termn of increasing the number of mental patients who were gainfully employed, but the overall impression of the Madison staff was that the demonstration was successful in terms of sending people home from the conference "eager, charged with energy, and filled with crusading spirit." It was felt that institutional change was initiated in many instances.

3. Although not all of the state teams were successful in implementing all of their plans, most of them reported some progress in each of the above listed categories. (This is reported in descriptive terms only.)

4. The post-conference follow-up is believed to have been extremely useful in strengthening implementation. The report states: ". . . the most effective thing we were doing was providing a contact person to whom teams could talk, tell their troubles, and brag about their successes—and from whom they could receive support, encouragement, and occasional help in opening communication lines to others." (p. 12)

5. Recommendations advanced by the staff include:

(*a*) Freedom for local adaptation of research results.
(*b*) Consistent and visible support from above for local personnel.
(*c*) Assignment of research utilization training to persons with high peer group acceptance.
(*d*) Recognition that dissemination alone will not accomplish research utilization, but that institutional change requires programs psychologically planned to foster behavioral change.

Comment by Reviewer

This report is long on subjective enthusiasm and short on hard data. The impressions of the researchers reinforce what has been found in other studies concerning the value of persistent, painstaking, person-to-person support for institutions (and personnel) facing the demanding task of making changes.

SOCIAL CHANGE

OBSERVATION AND ANALYSIS

Taylor, James B. Introducing social innovation. Paper presented at meeting of American Psychological Association, San Francisco, Calif., September 1968.

PURPOSE

The author undertakes to identify troublesome issues typical of interdisciplinary research.

METHOD

In a brief and informal presentation, the author draws upon his own experience and observation to formulate principles relevant to his purpose. He draws heavily on the experience of a project in Topeka which proposed to develop more effective psychological rehabilitation procedures for low-income people (5-year VRA grant). The project was interdisciplinary, required extensive community involvement, and was sufficiently successful so that when funding terminated, services were continued under local funding.

FINDINGS AND CONCLUSIONS

1. Interdisciplinary research is hampered by problems of interdisciplinary cooperation. Most professional disciplines are indoctrinated during training with professional *identity*; this insular emphasis makes the professional person ill-adapted to cooperative research.

2. Research objectives are prematurely formalized. Clearly defined conceptualization, though appropriate for basic research, may be limiting for applied research. Before research design is formulated, the question of usefulness should be explored: one asks not only whether the approach will work, but whether it will produce unexpected side effects. Applied research must be developed in terms of cost and consequence, balance and loss, rather than in terms of neat experimental design.

3. Social innovation may disrupt complex and valued roles, identities, and skills; accordingly, such innovation may die from malnutrition, be forcibly rejected, or may be so changed that it loses its essential character. In the author's opinion, many of these problems were circumvented in the Topeka project he cites. From his observation of this project, he draws the following principles for successful introduction of social innovation.

(*a*) *The principle of maximum involvement.*—The multidisciplinary staff was profoundly committed to the project.

(*b*) *The principle of cooptation.*—There was interpenetration of personnel from other groups and agencies. Hence, when the project drew to a close, a variety of agencies were familiar with its potential utility and willing to support its continuance. They perceived it as helping rather than threatening.

(*c*) *The principle of egalitarian responsibility.*—Each member of the research team had an equal hand in formulating and, later, in reformulating the research issues. They were creative professionals engaged in a learning task. Rsearch was preceded by a 6-month period of field exploration in which clinicians became acquainted with the low-income neighborhood and its inhabitants. The issues of status were dissolved as the research team struggled with the collective task.

(*d*) *The principle of research as creative play.*—At the outset, social workers and psychiatrists were awed at the prospect of research. Psychologists perceived of research as a "malignant superego" (rigid, precise, foreboding, superhuman, faultfinding, arrogant, carping). Because the project was approached with freedom and flexibility, these sterotypes did not persist.

(*e*) *The role of the reseach leader as spokesman and ideologist.*—There was an unusual amount of freedom, but it was freedom within limits. The research leader provided structure and discipline, acting as coordinator, ideologist, and taskmaster.

Comment by Reviewer

Fresh and lively formulations (particularly in (3) above).

KNOWLEDGE SELECTION

SUGGESTIONS

Thomas, Edwin J. Selecting knowledge from behavioral science. In *Building social work knowledge: A report of a conference.* New York: National Association of Social Workers, 1964, pp. 38–48.

PURPOSE

Knowledge essential to practice is a growing, ever-changing body of provisional concepts, hypotheses, and theories. In this article the author provides a list of criteria for selecting potentially useful research topics and findings. The article is aimed at both the researcher and the practitioner.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. *Selection Criteria:*

(*a*) *Content relevance.*—The framework for organizing social work knowledge should include a breakdown according to subject matter areas and levels (individual, group, organization, community, society) for which the findings are relevant.

(*b*) *Knowledge power.*—This criterion refers to the validity, reliability, and potency of research findings.

(1) The validity of propositions is deter-

mined by the extent of corroboration among propositions.

  (2) Prediction potency is related to the strength of a given proposition or variable in predicting outcomes and/or differences.

  (3) Variable potency is determined by the amount of variance explained. The more variance explained, the more potent the variable.

(*c*) *Referent features.*—The referents used in research need to be:

  (1) *Identifiable.*—The action one may take with respect to a variable is obviously greatly determined by the extent to which indicators of that variable are identifiable. If a referent is not identifiable it cannot be accessible.

  (2) *Accessible.*—The extent to which any given referent may be approached in action by a professional helper should also be considered by the researcher. The importance of accessibility is that its presence is necessary if the research is to have practical application.

  (3) *Manipulable.*—Direct action is only possible with variables that can be manipulated by the practitioner; this includes cost factors. That is, is it economically feasible to manipulate the variable in practice.

  (4) *Potent.*—The researcher needs to consider those referents that exert the most influence in any existing helping context. An indicator may be weak in a helping context even when the variable has high potency in the research context.

  (5) *Ethically suitable.*—The variables for proposed manipulation must be ethically suitable for such action. For example, research based on the offering of bribes or sexual inducements would be ethically unsuitable, while research focusing on the positive reinforcement aspects of repeating a client's statements would be ethically acceptable.

2. *The Applicability of Knowledge Resulting From the Screening Criteria.*—The author asserts that distinct types of applicability may be identified on the basis of criteria fulfillment.

(*a*) *Material immediately applicable for direct action* is that which meets all screening criteria. The author cites reinforcement theory as an example.

(*b*) *Material immediately applicable for complementary action* is that which meets the criteria of content relevance, knowledge power, referent identifiability, and potency but fails other referent standards. That is, the referents are: Inaccessible, too costly, nonmanipulable, ethically unsuitable. Research in personality and persuasibility is cited as an example of this type of research.

(*c*) *Material hypothetically applicable for direct action* is that demarked by knowledge that fails noncritically on one or more of the screening criteria.

(*d*) *Material hypothetically applicable for indirect or complementary action* is that research that has not clearly indicated its presumed relationship to therapeutic outcomes.

(*e*) *Inappropriate material* is that which critically fails to meet the screening criteria.

3. The author concludes with the following statement: "Utilization of research findings is not a direct simple importation; rather it calls for detailed, thoughtful appraisal of relevance of the content, power of the knowledge, as well as many practical considerations relating to the knowledge referents."

Comment by Reviewer

The author offers some rather clear and concise guidelines that could be utilized by both the researcher and the practitioner in designing and selecting research that will be of value.

Thompson, Victor A. Bureaucracy and innovation. *Administrative Science Quarterly*, June 1965, 1–20.

PURPOSE

The paper considers the obstacles to innovation within the modern bureaucratic organization and makes some suggestions for changes that would facilitate innovation.

METHOD

This is a theoretical study derived from the author's observations and analysis.

FINDINGS AND CONCLUSIONS

1. Characteristics frequently found in bureaucratic organization which serve as barriers to innovation include:

(*a*) The organization often is monocratic; there is only one point or source of legitimacy.

(*b*) Conflict is not legitimized and this depresses creativity.

(*c*) Control over all resources is centralized.

(*d*) It offers extrinsic rewards of money, power, and status, rather than satisfaction from one's work.

(*e*) This reward structure places a high value on compliance and conformity.

(*f*) In a monocratic organization, there is veto but no appeal; such an organization may allow new ideas to be generated, but is apt to veto them.

(*g*) The characteristic psychological state in a bureaucratic organization is one of anxiety and chronic dissatisfaction; this leads to a conservative orientation in which innovation is perceived as threatening.

(*h*) The bureaucratic organization is highly departmentalized, with such innovative activity as it permits segregated into research and development units.

(*i*) Bureaucratic organizations are staffed primarily by the "desk classes" and only minimally by professionals.

(*j*) In such organizations, praise and blame attach to jurisdictions; one feels that he can only fail once.

2. The attributes of the innovative organization are presented in terms of their:

(*a*) General requirements:

  (1) There must be uncommitted resources—money, time, skills, and good will.

  (2) A diversity of inputs will be allowed, since this is needed for the creative generation of ideas.

  (3) There must be neither a complete commitment to nor a complete alienation from the organization; rather, the individual perceives the organization as an avenue for professional growth.

  (4) Rewards in such an organization come primarily from the search process, professional growth, and the esteem of colleagues.

  (5) The creative atmosphere must be free from external pressure; one waits for the best solution, rather than being forced to accept the first solution.

  (6) The innovative organization is primarily a professional one.

  (7) In such an organization, power is dispersed rather than concentrated.

(*b*) Structural requirements:

  (1) The innovative organization will be relatively loose structurally; job responsibilities will not be narrowly defined.

  (2) The organization will not be highly stratified; there will not be "awesome" status differences, and communications will flow freely.

  (3) Group processes will be used more (and more openly) than at present. The professionals in the organization will enjoy multiple-group membership which will serve as a counterforce to the authority grouping. That is, when a new idea is supported by a group, it is not so readily vetoed.

  (4) The innovative organization is not

highly departmentalized, hence, not highly parochial.

(5) The simplest unit in the organization should not have a highly specified task, but should be an integrative unit of professionals and support personnel. The organization of such units should be project oriented.

(6) Ideally, such an organization should be capable of restructuring itself continually in the light of changing tasks of problem solving; leadership will be rotating rather than constant.

(7) There will be "devaluation of authority and positional status and the recognized, official sharing of power and influence" (p. 18).

3. The following implications for administrative practice are cited:

(*a*) Annual performance ratings by superiors probably will have to be dropped.

(*b*) There will be an increasing proportion of professionals, and job descriptions and classifications will be modified accordingly.

(*c*) Peer evaluation will be increasingly important in recruitment and placement.

(*d*) Procedures with respect to secrecy and loyalty (for example, patents, publications) will be modified.

(*e*) There will be greater intraorganizational mobility.

(*f*) Resources will be fluid rather than overspecified.

(*g*) Administrative activities will be dispersed and decentralized.

Comment by Reviewer

A bold and cogent set of ideas, highly relevant to most government agencies—including almost all organizations involved in developing and delivering mental health services. Some bureaucratic organizations have, however, developed mechanisms for reducing some of the tendencies or characteristics which the author generalizes.

RESEARCH UTILIZATION ANALYSIS AND SUGGESTIONS

U.S. Department of Health, Education, and Welfare. *Research utilization in aging: An exploration.* Washington, D.C.: The Department, 1963.

PURPOSE

The purpose of this brief volume is to focus attention on problems of reserach utilization as related to aging.

METHOD

The most relevant sections consist of personal beliefs based on the experience of the contributors.

FINDINGS AND CONCLUSIONS

1. *In order to maximize the chances of getting research utilized, one should:*

(*a*) Understand the frames of reference within which individuals perform their professional tasks.

(*b*) Work through leading practitioners.

(*c*) Consider the motivations of the audience and their perceptions of the change agent's motivation.

(*d*) Show people how new procedures can help them rather than criticize them for what they have been doing wrong.

(*e*) Realize that people owe greatest allegiance to activities in which they are committed by direct participation. Attitude change will follow behavior change.

(*f*) See that messages are repeated over and over. There are wide variations in response to communication. Some people will accept right away and later reject; others will ignore; others will reject and then accept.

2. *Barriers to utilization of research are:*

(*a*) The practitioner's need for how-to-do-it guidance; he didn't have the skill to put findings into operational terms.

(*b*) The damming-up of information was seen as another barrier. Information of potential interest often strikes barriers of rigid departmentalization.

(*c*) The reluctance of administrators to accept research findings until they have personally tested their validity.

(*d*) Most social scientists hold the questionable view that the practical implications of research are not within their province.

3. *Suggestions for getting research to work were as follows:*

(*a*) Adapt fundamental techniques similar to the agricultural extension method.

(*b*) Hire staff personnel who are interested in research and know their research literature.

(*c*) Have more and better informed visits to researchers and demonstration projects. A barrier to implementing the above is that research staffs often feel visitors interrupt their work.

(*d*) To overcome this feeling of research staffs, one proposal was to add a demonstration visit supplement to basic research grants.

(*e*) Build utilization right into research projects by providing funds for adequate publication and dissemination of results.

Comment by Reviewer

It is interesting to note that several years later the same concerns exist with the same kinds of suggestions being proffered.

RESEARCH PUBLICATION AND UTILIZATION

ANALYSIS AND SUGGESTIONS

Van den ban, Anne W. Utilization and publication of findings. In C. H. Backstrom and G. D. Hursh (Eds.), *Survey research methods in developing nations.* Chicago: Northwestern University Press, 1963.

PURPOSE

The author's purpose is twofold. First, she focuses on how the researcher can stimulate the utilization of his findings by practitioners. Secondly, she offers some advice on the publication of findings.

METHOD

This analysis is based on the author's experience and knowledge.

FINDINGS AND CONCLUSIONS

1. Practitioners will only use research findings to solve problems in a new way if—

(*a*) they realize they have a problem.

(*b*) they define their problem in such a way that it can be solved;

(*c*) they believe that research findings will help them to solve this problem;

(*d*) they have confidence in the capability and the motives of the researcher;

(*e*) they know the findings;

(*f*) they are willing to experiment with new solutions to this problem;

(*g*) they are in a social position to do so; and

(*h*) they believe that they can avail themselves of the money and other resources necessary to do so.

2. Research becomes relevant for practitioners when they participate in the research process. Utilization and application of findings requires serious attention during the planning of the research project. "If a researcher starts to worry about it when writing his research report it is usually too late."

3. Several general characteristics of the practitioner-researcher interface are described:

(*a*) *Practitioner expectations.*—Sometimes practitioners expect a recipe for problem solution from the researchers. Since the practitioner and not the researcher is often held responsible for the failings of a given innovation, the practitioner is often unwilling to undertake experimentation with a new idea without the specific recommendation of the researcher. It is often impossible for the researcher to make recommendations of this nature.

(*b*) *Practitioner ruts.*—Practitioners are likely to do things as they have always done them without taking the time to think through whether this is really the best way. If the practitioner found a good way of doing things 20 years ago, he is likely to operate in this same vein even though considerable changes and advancements have been made. One reason for the continuance of old practices is the lack of time many practitioners have for ferreting out relevant research.

(*c*) *Researcher predictions of probable consequences.*—The researcher should assume the responsibility for giving as much information as possible about the probable consequences of various alternative solutions to a problem, thereby making it easier for the practitioner to make the best choice.

(*d*) *Researcher as persuader.*—Often the practitioner must be *convinced* that he needs this kind of information or data for sound decisionmaking. Usually very little effort is made by the researcher to persuade; most of his efforts are directed toward informing.

(*e*) *More work.*—Frequently implementation of research findings involves more work for the practitioners. Often the additional effort is not compensated by other rewards.

4. Cooperation between researchers and practitioners is desirable in nearly every phase of the research process.

(*a*) *Formulating of research problems.*—Practitioner participation in the formulation of research problems usually results in research problems which are more relevant for policy decisions. Practitioners know the problems they face daily in their work. They are also aware of the limitations imposed by the structure of the organization and situation. Knowledge of such variables is important for determining workable alternatives to problems. Such participation also decreases the psychological distance between the practitioners and research.

(*b*) *Deciding on research methods.*—The author suggests that while the good researcher has the technical knowledge to decide which research methods may prove best to solve the research problem, it is desirable to ask advice from the practitioners even at this stage. Practitioners can contribute the knowledge of the field situation, and knowledge of client or respondent problems and levels of understanding. Moreover, confidence in the research is built up if the practitioners see the care with which the research instruments are developed.

(*c*) *Gathering data.*—The author advocates the participation of practitioners in data gathering as part of inservice training. The practitioner can also be a helpful feedback mechanism for the researcher by relaying information on the reactions aroused by the research project.

(*d*) *Analyzing and interpreting the data.*—Although the main responsibility for analyzing and interpreting the data remains with the researcher, it can be useful to involve practitioners as far as possible in this phase of the research process. The author cites several studies on the participation principle to support this contention.

(*e*) *Drawing conclusions for action programs from the research findings.*—The responsibility for the action programs remains with the practitioners and not with the researcher. It is desirable for the researcher to elaborate on the implications of his findings, so the practitioner has some guidelines for utilization.

5. Tension may arise between researchers and practitioners in a close working situation. "In order to be able to work with enthusiasm a good practitioner should be convinced that his work is important and that the way he does it is basically correct. A good scientist on the other hand has the task to question this, which might make the practitioner uncomfortable and defensive" (p. 19).

Tensions can be reduced if the researcher is sensitive, does not stress educational or status differences and recognizes he is only a specialist in research and that practitioners may often know more about the field than he does. Researchers can also stress the strengths of current practices or programs, and discuss in advance the expected role of the practitioners in research utilization.

6. Utilization of research findings cannot be expected unless the following conditions are met—

(*a*) the researcher has a real interest in the problems of the practitioner;
(*b*) the researcher cares about the utilization of his findings;
(*c*) the researcher is willing to invest time to develop better practitioners, who can take more initiative in decisionmaking;
(*d*) the researcher is sensitive to and able to cope with the anxiety he might arouse with his research; and
(*e*) the superiors of research sponsors stimulate and allot time and money for working with practitioners.

7. Research findings will not be utilized unless supported by personal communication with practitioners. The author advocates the use of a middleman to serve this communication function. The researcher should see that a change agent, or social science consultant is aware and convinced of the relevance of his findings and then leave the job of communicating with the practitioners to the middleman.

The consultant can offer the practitioner the benefits of many different research findings as he will not have the psychological investment in one set of research findings that the researcher may have.

8. A research study is not finished before a report has been prepared and communicated to the audience one intends to reach. The author outlines the differences among reports designed for other scientists and researchers, practitioners and the general public. He stresses the importance of getting the findings to practitioners as quickly as possible, in as concrete as possible terms. He suggests the researcher prepare a report for practitioners and mimeograph some additional information on research methodology, which is sent to other scientists upon their request, or present this information in an appendix.

The author devotes considerable space to a specific discussion of writing style, presentation of figures, and other visual aids.

9. Another way of securing research utilization is through seminar and/or inservice training. This adds the personal touch to the communication process that is important in persuading individuals to try new ideas.

Comment by Reviewer

A helpful exposition of ways in which researchers and practitioners can collaborate. It is interesting that the author perceives the role of the middleman to be essentially that of communicator. It might well be that the entire interface process, as articulated by the author, might be facilitated by having a middleman participate from the outset.

EDUCATIONAL INNOVATION
CASE STUDY AND ANALYSIS

Watson, Goodwin. Utopia and rebellion: The new college experiment. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964, pp. 97–116.

PURPOSE

The author undertakes to identify the attributes of communities which are designed to incorporate an ideal state of affairs—that is, utopian communities.

METHOD

The generalizations which are advanced are drawn from the experiences of New College, established in 1932 at Teachers College, Columbia University. New College existed for 7 years and enrolled approximately 300 students. Its utopian aspects included individual guidance, no uniform credit ladder, emphasis on individual projects rather than lectures, work program and study in a foreign country, extended contact with children, close relations among students and with faculty. The experiment was periodically embattled, was abruptly terminated, and despite a rebellious attempt by students and faculty to save it, was not revived. Its history suggests to the author a number of utopian characteristics.

FINDINGS AND CONCLUSIONS

1. Typically, a utopian community puts into practice ideas which have been around for a long time; the discrepancy between what people profess and what they actually do provides the initial impetus.
2. Utopias spring up in clusters during certain historic periods. The social milieu which gives rise to one such experiment usually stimulates others.
3. Most utopias center about a strong, benevolent father figure.
4. Founders of utopias have usually sought some place where they would be free from expectations and pressures to conform to the norms of an established culture.
5. Utopias tend to attract people who want to read, to meditate, and to discuss ideas; often these people are inept at handling practical, everyday tasks.
6. Many participants in utopian communities are motivated by rebellion against restrictions of the established order. They tend to be alienated, iconoclastic, and eccentric, and are accordingly ill-adapted to community life.
7. Because they are often completely cut off from the external environment and from former personal ties, the members of a utopian community are highly dependent on one another.
8. Living arrangements within a utopian community are often improvised and tentative and generate feelings of insecurity; accordingly, there is a high rate of defection.
9. Utopias are generated in a spirit of ferment which often pervades and splinters the new community.
10. Most utopias are beset by financial worries.
11. Utopias are characteristically isolated—free from restraints but also cut off from potential sources of external support.
12. The larger external community tends to view the utopian experiment with ridicule and sometimes with hostility.
13. Members of a utopian community tend to minimize the dangers of external hostility.

Comment by Reviewer

The detailed account of New College, which elaborates on the foregoing findings, is not included in this summary. Nor is the discussion of the events following the disbanding of the experimental school. The generalizations about utopian communities have implications with respect to a climate receptive to innovation.

PLANNED CHANGE

ANALYSIS AND SUGGESTIONS

Watson, G., and Glaser, E. M. What we have learned about planning for change. *Management Review*, 1965, 54(11), 34–46.

PURPOSE

This article spells out possible steps management can take to facilitate a change within an organization.

METHOD

The authors draw upon their own experience, their knowledge of the relevant literature and a research study they conducted of "Utilization of Applicable Research and Demonstration Results" to suggest specific methods for effectively implementing organizational changes.

FINDINGS AND CONCLUSIONS

The major findings are as follows:

(1) Within an organization there are conflicting pressures for both stability and change. Those who want to keep things the way they are usually want to con-

serve what they are sure of while those who favor change are usually striving for improvement or gain. The pro and con forces need to be analyzed in order to assess their strengths, select specific points on which to concentrate, and define possible hidden allies who may be in favor of the change.

(2) Bringing about an orderly change requires leadership from persons in influential positions within the organization or from an outside consultant who can gain the trust of those concerned, including the relevant rank-and-file personnel. The planning of change should, where feasible, be shared by those who will be most affected by it. Work groups often are highly resistant to changes imposed from above or from outside.

(3) Extensive factfinding and analysis are often necessary before the underlying malfunctions can be identified. Pressure for prompt action before the necessary planning is completed, and staff defensiveness during the factfinding and planning stages are two of the possible barriers to an orderly change.

(4) After the diagnosis of the difficulty, the next need is to generate proposals for solving it. Inviting suggestions from members of an organization, becoming familiar with what other organizations have done in efforts to solve similar problems, and taking time away from the usual responsibilities in order to seek a new perspective were all suggested as methods of generating solutions. The authors also indicated that the objectives to be achieved should be clearly stated and broad guidelines for achieving them established.

(5) The next suggested step was to schedule the best possible use of available resources of people, money, and sometimes equipment. The authors believe that human resources for planning change, such as top management, other individuals with informal prestige, and the rank-and-file members of an organization * * * are often neglected or misused.

(6) The need for a favorable, open-mindedly receptive company climate was stressed. If adverse conditions exist then some relevant type of "climate training" may need to precede the introduction of change. The following steps may be worth consideration: (*a*) Make clear the needs for change, or provide a climate in which others feel free to identify such needs; (*b*) permit, encourage, and secure relevant group participation in clarifying and expanding the concept of these needs; (*c*) state the objectives to be achieved; (*d*) establish broad guidelines for achieving the objectives; (*e*) leave the details of change planning to the parts of the organization that will be affected by the change and/or must implement the plan; (*f*) indicate the benefits or rewards to individuals and to the group expected as a result of successful change; and (*g*) materialize the benefits or rewards; i.e., keep promises.

(7) When faced with resistance to change, frequently (but not always) the wisest and most effective course of action is to focus on reducing resistance rather than trying to overwhelm it. A pilot experiment often may be helpful before large-scale institution of a change.

(8) The balance relationships throughout the given organization should be considered in order to prevent negative side effects from appearing in areas that are not directly connected with the department or portion of the total system where changes are being introduced.

(9) The *fait accompli* where the situation or operation is changed by responsible authority, before attempting to bring about the desired attitude change, was suggested as an effective method in situations where there is a heavy "loading" of irrational prejudice. In these instances change may be more likely to come about if imposed from the top.

(10) In order to maintain the changes, a procedure for periodic review and revision is needed. A breathing spell to consolidate the gains made by the organization before launching other innovations may be desirable.

Comment by Reviewer

This article suggests step-by-step procedures to follow in implementing orderly changes in an organization. Many specific suggestions are given. These suggestions are often accompanied by case study examples.

EDUCATIONAL CHANGE STRATEGIES
HISTORICAL COMPARISON

Wiles, Kimball. Contrasts in strategies of change. In R. R. Leeper (Ed.), *Strategy for curriculum change.* Washington, D.C.: Association for the Supervision of Curriculum Development, 1965, pp. 1–10.

PURPOSE

The author compares the assumptions underlying directed change efforts in education prior to 1957 with the assumptions underlying directed change efforts after 1957.

METHOD

The ideas in this paper are based on the broad experience and observations of the author.

FINDINGS AND CONCLUSIONS

1. The differences between the two periods are in part reflections of increased mass media exposure. The general public is exposed to more ideas and is, in turn, stimulated to promote change in schools. Other differences reflect the increased efforts of the Federal Government to promote change. Strategies for directed change prior to 1957 were based on the various assumptions which influenced curriculum change programs in the late 1950's and early 1960's, such as:

(*a*) Change in the entire system, State or city, can be effected by adopting a new master plan drawn up by outside experts.

(*b*) Change in the curriculum is effected most efficiently at the local school building level, and occurs as people change through their participation in decisionmaking related to the curriculum.

(*c*) Change in the curriculum is produced through inservice education, which develops new teacher perceptions and skills.

(*d*) Change in the curriculum is effected by: (1) Supplying teachers with consultants who assist them with innovation; (2) supplying teachers with new materials of instruction; (3) providing inservice education for the principal which produces a change in his work style; and (4) providing workshop opportunities for key teachers in a building who then become resource persons and leaders for other teachers on the staff.

2. After 1957 new directions are reflected in the assumptions for directed change strategies. The basic attitude underlying the new assumptions is that change should not be equated with chance but with development; and innovation should be linked to long-term goals. The assumptions are as follows:

(*a*) Some persons in government, foundations, universities, public schools, or somewhere must decide on the desired goals and plan innovations designed to promote them.

(*b*) Basic research, program design, and field testing should be done by outside forces.

(*c*) Major instructional innovations should be introduced by the administration because they can marshall the necessary authority and precipitate the decisions necessary for adoption.

(*d*) The prepackaged instructional system can be introduced despite original opposition or apathy on the part of the teachers.

(*e*) The informal communication system determines whether formal presentations will be heard.

(*f*) Real or assumed knowledge of the innovator's identity is a major variable in the acceptance of a particular innovation.

(*g*) The key to successful innovation is providing assistance to teachers as they begin to implement the adopted programs.

(*h*) The most persuasive experience that can be provided to convince staffs of the value of an innovation is to make provision for them to visit a successful new program and see it in action.

(*i*) Due to teacher turnover, a continuous program of inservice education in the skills necessary to implement the innovation must be available for new teachers brought into the system.

(*j*) The process of change contains three steps—innovation, diffusion, and integration.

(*k*) Changes in social systems are much more difficult than changes in individuals or groups.

Comment by Reviewer

We may now be into still another era at this time. The assumptions said to underlie the research aspect of directed change efforts are open to question (assumptions (2)(*b*) through (2)(*d*). It would seem that assumptions (2)(*e*) through (2)(*k*) are more valid in light of current knowledge.

RESEARCH UTILIZATION
CASE STUDY

Wilson, Elmo C. The application of social research findings. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961, pp. 47–58.

PURPOSE

To explore the extent to which the social science researcher can exert an influence over utilization.

METHOD

This project is divided in two parts. In the first, the author indicates which factors, with respect to research utilization, the researcher does not control and which are subject to his control. This segment of the study is not summarized herewith, since it adds little to the field. The second portion of the study is a report of a followup of a management study carried out for a small, denominational college. The followup had been written into the original research contract, and called for the return of the research staff, 1 year after submission of the report, to find out what progress had been made in applying the findings of the study.

FINDINGS AND CONCLUSIONS

1. Of the more than 160 specific recommendations, approximately three-fifths had been or were being carried out.

2. In a few instances, the research staff concluded that the original recommendations had not been justified.

3. Of the recommendations which were not being carried out, reasons for lack of implementation could be categorized as follows:

(*a*) Human relations reasons (inertia, entrenched personal preferences, etc.),

(*b*) Situations in which the college administration decided to discard the recommendations,

(*c*) Situations in which the recommendations were not as appropriate as they had originally been, because of subsequent developments in the client situation.

4. The research staff concluded that utilization might have been greater if certain weaknesses in the report had been corrected. These weaknesses included:

(*a*) The major context of the report was diluted by the inclusion of a number of minor problems.

(*b*) The report was overburdened by a substantial appendix.

(*c*) The summarized recommendations were at the end of the report and they would have had more impact at the beginning.

(*d*) The report did not include an estimate of the comparative costs of the various recommendations, nor a proposal concerning the variable time periods within which it would be desirable to bring them about.

5. The research staff was convinced that the knowledge by the client that a followup survey was to be made served as an incentive toward utilization of recommendations.

Comment by Reviewer

A promising idea (that of the followup study) but it failed to generate anything particularly fresh or deep.

UTILIZATION OF RESEARCH BY FARMERS

CASE STUDY

Wilson, M. L. The communication and utilization of the results of agricultural research by American farmers: A case history, 1900–50. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, vol. 1. Stanford, Calif.: Institute for Communicational Research, Stanford University, 1961, pp. 75–111.

PURPOSE

This is an account of how the utilization of scientific research has impressively affected the progress of agriculture between 1900 and 1950. Its presentation is based on the assumption that the examples presented will give insight into the general problem of utilizing behavioral science.

METHOD

The author presents a paper outlining the methods used in getting farmers to put into practice findings obtained in agricultural research. No clear-cut ways of getting useful information from college campuses to farmers had been developed. Making research results easily available was not enough. It also necessitated changes in the farmer's viewpoint, personality, and behavior. The following ways were used in an effort to change the outlook of the farmers and disseminate information:

(1) Institutions and channels of communication were developed between farmers and agricultural researchers.
(2) As specialized services developed they drew personnel from farm families so that no psychological gulf existed.
(3) When farmers saw a successful solution to a serious agricultural problem they became more amenable to other new ideas.
(4) The agricultural college course in Iowa was opened to sons and daughters of farmers and in place of the usual entrance requirements one only needed to be farm-raised and have completed the farm school.
(5) Agricultural branches of land-grant colleges consisted of:
  (*a*) Academic work.
  (*b*) Experiment and research—usually "problem research" directed toward problems seen as limiting production or profit.
  (*c*) Extension work—Smith Lever Act in 1914 provided that each State carry on extension work through the land-grant college.
    (1) The county agent organized groups of farmers and aided farmers in helping themselves.
    (2) Extension staff at the campuses sent specialists to county agent meetings with new research ideas and then returned to the campuses with current farm problems.
    (3) 4–H Clubs were founded to present new ideas to children who were not set in their ways.
    (4) Local farm newspapers, booklets, and radio were avenues for broadcasting agricultural information.

FINDINGS AND CONCLUSIONS

Developments in communication and utilization of results of agricultural research are as follows:

(1) Farmers responded, like other producers in a free economic system, to the profit motive. The more they are acculturated to this flow of new information the more easily and profitably it is put into practice.

(2) Agricultural communication research will also need to include the problems of motivation, personality, and other complex areas underlying human behavior.

(3) Three stages were found to exist in the process of acceptance—
  (*a*) awareness;
  (*b*) interest; and
  (*c*) evaluation leading to trial and ultimate adoption or rejection of the ideas.

(4) Personal and social factors effecting adoption of ideas were—
  (*a*) personal prestige;
  (*b*) family behavior;
  (*c*) educational development; and
  (*d*) group and community behavior.

(5) Farmers tend to fall into four classes as users of research—
  (*a*) innovators;
  (*b*) early adopters;
  (*c*) informal leaders; and
  (*d*) nonadopters.

(6) The more usable information the farmers receive, the more they tend to demand.

Comment by Reviewer

Though the article dealt with quantities of agricultural information, it did present positive ideas for drawing the people themselves into the academic community.

RESEARCH-PRACTICE RELATIONSHIP
ANALYSIS

Wolfensberger, Wolf. Dilemmas of research in human management agencies. *Rehabilitation Literature*, June 1969, 162–169.

PURPOSE

The discussion focuses on certain important items agency administrators should consider in making decisions about supporting and using research within their agencies.

METHOD

The paper is an analysis based on the author's observations and experiences, and, in addition, drawing substantially on the literature.

FINDINGS AND CONCLUSIONS

1. The author presents the following considerations which should be weighed in making a decision to start or support intraagency research.

(*a*) An underlying assumption should be the presence of tension between the forces of continuity and the forces of change—specifically within what the author designated as human management agencies (that is, those concerned with education, correction, psychiatry, psychology, public relations, rehabilitation, social work). His position is that there is nothing wrong with such tension if agency administrators understand it and use it constructively. One way of reducing the tension is for the administrator to accept as a "given" fact that almost all of his current practices are already outdated.

(*b*) The administrator should explore his own conscious and unconscious attitudes toward research generally, in his field specifically, and with reference to specific types of research. Is his position: "Research yes, but not here now"?

(*c*) What problems can the administrator tolerate to see investigated? What are the sanctified areas? These should be circumvented as fields of research?

(*d*) Can the agency tolerate controversy and dissent? If not, research is not advisable.

(*e*) Can the administrator deal with a creative researcher? The researcher may be divergent, a nonconformist. Will he be given leeway to "think the unthinkable, say the unsayable, embrace the unembraceable"? (p. 164).

(*f*) Administrators (and agency personnel) tend to have an unrealistic idea of how much money, time, manpower, equipment and space research requires. It is suggested that an agency acquire experience concerning the foregoing realities, through internal research, before it seeks external support for research.

(*g*) The applicability of the research to agency operations may be determined by agency size and organizational structure.

(*h*) Top level management must be prepared to dismiss, displace, or demote members of middle management who cannot carry out new research-related policies.

2. The decisions concerning what kind of research to support, and how, will involve exploration of the following issues.

(*a*) The administrator should be willing to look not only at visible problems but at the underlying causes.

(*b*) A range of roles may be open to the researcher: Laboratory oriented; does little research himself but can facilitate the research of others; empire builder; grantsman; more of a resource person than a producer; primarily a teacher and adviser; thinker-innovator who may do little formal research but makes his contribution by theorizing.

(*c*) What will be the focus of the research? It should reflect the model that prevails in the agency (that is, medical research in a medical agency, behavioral research in a developmental agency, etc.). The author believes that both interdisciplinary and multidisciplinary research are overrated; good interchange depends on chance relationships, not on conscious structuring.

(*d*) Will the research be basic or applied (the latter to include evaluation)? Basic research tends to isolate agency personnel from the research unit. Applied research, with its implications of change, may induce defensiveness. If applied research is to have maximum chances to be used, the administrator should assure the following conditions:

(1) The research team must not be administratively subordinate to the person who heads the operations to which the research applies.

(2) The research operations must be defined as prestigious.

(3) There must be two-way, face-to-face communication between researchers and those who will be affected by it.

(*e*) Innovative ideas should be rewarded, *whether they are actually accepted or not.*

3. In a concluding comment, the author points out that in the physical sciences, research almost invariably precedes change. This, he contends, is not true of social sciences, where, in fact, decisions are made which are inconsistent with current research findings. "* * * we must learn to control social changes rather than having them control * * * us" (p. 168).

Comment by Reviewer

This is an informal, lively, and provocative presentation. The author's professional identification is currently with mental retardation, but his perceptions are widely applicable.

RESISTANCE TO CHANGE
ANALYSIS AND SUGGESTIONS

Zander, Alvin. Resistance to change: Its analysis and prevention. In W. G. Bennis, K. D. Benne, and R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962, pp. 543–548.

PURPOSE

The purpose of this article is to define resistance to change in industrial organizations, to identify the conditions that appear to be associated with development of this resistance, and to examine some means whereby resistance may be prevented or decreased.

METHOD

The author drew on his own knowledge of resistance to change to prepare this paper. No specific method of information gathering is discussed.

FINDINGS AND CONCLUSIONS

1. There is one common denominator in examples of resistance to change, which might serve as a defense of such resistance. That is, they all show behaviors intended to protect individuals from the effects of real or imagined change.

2. It is the protective function of behavior, rather than specific actions, which identifies resistance. Specific behavior may take many forms.

3. Some conditions conducive to resistance:

(*a*) Resistance can be expected if the nature of the change is not made clear to the people who are going to be influenced by it. There is some evidence to support the hypothesis that those persons who dislike their jobs will most dislike ambiguity in a proposed change.

(*b*) Different people will see different meanings in the proposed change. They may see in it an indication that they are doing a poor job, that their office will be abolished, or other personally undesirable causes or effects, which may not be accurate estimates of the situation.

(*c*) Resistance can be expected when those influenced are caught between strong forces pushing them to make the change and strong forces deterring them from making the change.

(*d*) Resistance may be expected to the degree that the persons influenced by the change have pressure put on them to make it, and will be decreased to the degree that these same persons are able to have some "say" in the nature or direction of the change.

(*e*) Resistance may be expected if the change is made on personal grounds rather than impersonal requirements or sanctions.

(*f*) Resistance may be expected if the change ignores the already established institutions in the group.

4. Resistance will be prevented to the degree that the changer helps the "changees" develop their own understanding of the need for the change, and an explicit awareness of how they feel about it, and what can be done about these feelings.

5. The principle stated in (4) above implies that the administrator can use resistance as an important symptom. Specifically, he can use the nature of the resistance as an indicator of the cause.

6. There is value in blowing off steam. There is good evidence that new attitudes can be accepted by a person only if he has a chance to thoroughly air his original attitude.

7. Resistance may be less likely to occur if the group participates in making the decisions about how the change should be implemented, what the change should be like, how people might perform in the changed situation, or any other problems that are within their area of freedom to decide.

8. Resistance will be less likely to develop if

facts which point to the need for change are gathered by the persons who must make the change. People will be more likely to act in terms of information they gather themselves than in terms of information gathered by others and delivered to them.

Comment by Reviewer

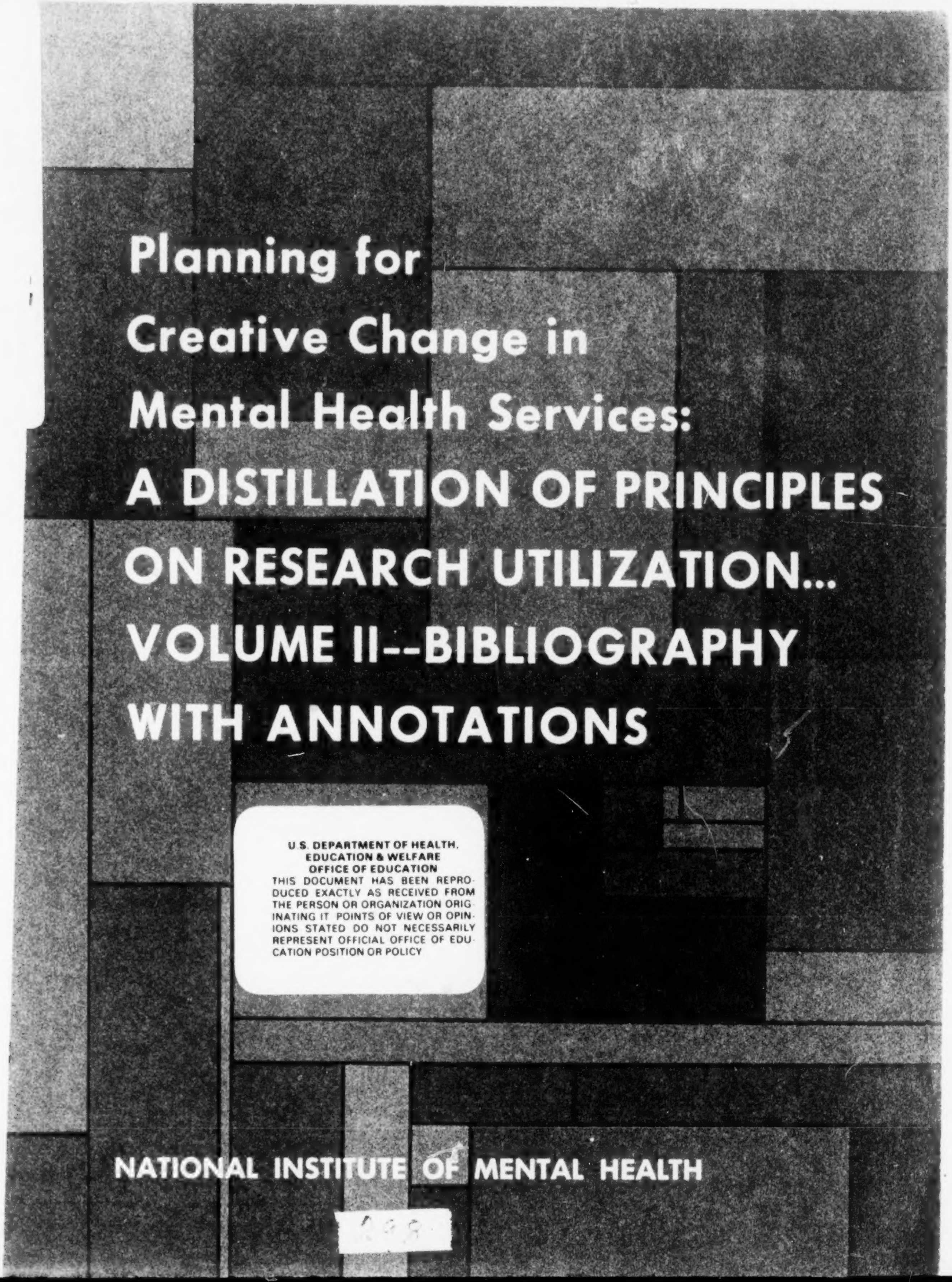
This article provides a valuable guide to identifying and reducing resistance to change. There is no citation to other research, nor is reference made to the method of obtaining the information herein imparted.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1972 O—429-414

Publication No. (HSM)71-9060

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Services and Mental Health Administration

National Institute of Mental Health



Planning for Creative Change in Mental Health Services: A DISTILLATION OF PRINCIPLES ON RESEARCH UTILIZATION... VOLUME II--BIBLIOGRAPHY WITH ANNOTATIONS

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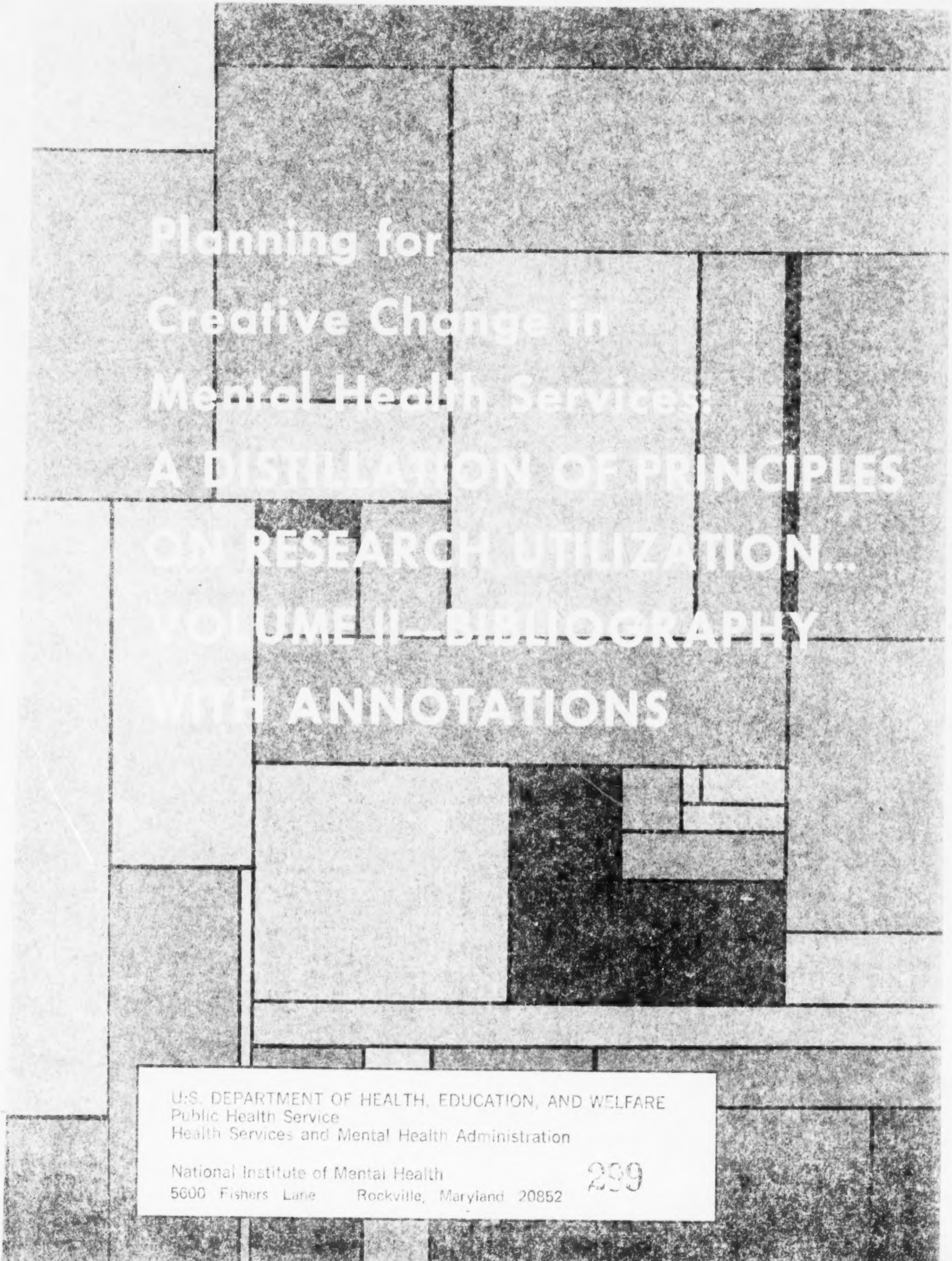
188



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Public Health Service
Health Services and Mental Health Administration

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5600 Fishers Lane Rockville, Maryland 20852

299

Publication No. (HSM) 71-9061

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $2, Stock No. 1724-0146

TABLE OF CONTENTS

Preface *v*

Part I Bibliography 3

Part II Annotations 43

PREFACE

The *Annotated Bibliography on Research Utilization* is one of a series of Institute publications on mental health services research and development. The purpose of the series is to offer assistance to persons working toward continually increased effectiveness of delivering mental health contributions to people in need.

Reflected in all publications in the series is a three-phase process of services improvement through planning for creative change.

(1) **Identification of problems and needs for change in services.**

Use of Program Evaluation is aimed toward the improvement of formal approaches in front line facilities to help determine when change is—or is not—needed.

(2) **Search and research to provide direction for effective change to solve problems and meet needs.**

The publication, *Innovations and Current Conclusions,* issued several times each year, is to highlight innovative techniques. *Information Sources and How to Use Them* is offered as an aid to mental health workers seeking new knowledge through all relevant literature. A section of the *Manual on Research Utilization* has been addressed to those planning original research on innovative mental health services delivery techniques.

(3) **Promotion of the diffusion and adoption of innovations through planned change.**

Out of recognition that the dissemination of knowledge alone ushers little change, sections of the *Manual on Research Utilization* have been devoted to techniques of planned change, addressed to consultants and administrators/practitioners. For persons wishing to become more thoroughly familiar with the utilization of knowledge in planned change, *A Distillation of Principles on Research Utilization . . . Volume I* is offered. With the hope that it will foster continued investigations in refined techniques of change through knowledge utilization, this *A Distillation of Principles on Research . . . Volume II—Bibliography with Annotations* has been issued as a part of this series.

This bibliography, together with the annotations, resulted from work carried out under Contract No. 42–69–1, National Institute of Mental Health, awarded to the Human Interaction Research Institute. Sincere thanks are extended to Dr. Edward M. Glaser and his HIRI staff, who worked with great care and discernment in their comprehensive review of the relevant literature dealing with research utilization. Mrs. Irma S. Lann, head of the NIMH Research Implementation Section, originated the idea of the literature review and served throughout the duration of this contract as project officer. Appreciation is extended to her for excellent judgment, attention to details, and preparation of the bibliography for publication.

It is hoped that this volume will be of help to persons wishing to become more familiar with the general field of research utilization; but its preparation also has been oriented toward investigators engaged in further research and demonstrations on knowledge utilization and planned change.

Howard R. Davis, Ph.D.
Chief, Mental Health Services Development Branch,
Division of Mental Health Service Programs.

PART I

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PART II

ANNOTATIONS

ANNOTATIONS

EXPLANATION OF ANNOTATIONS

The following annotations attempt to distill the essence of each work. Each article, book, paper, etc., is classified in FOUR ways: by *topic*, by *subtopics*, by *type*, and by relevant *distillation section*.

TOPIC. Main topic designator is located in top right corner of each annotation. A list of the main topics follows below. In the sample below, the main topic is "PROMOTION OF UTILIZATION."

SUBTOPICS. Subtopic designators are found within the parentheses following the reference citation. Subtopics, in general, are taken from topic list mentioned above. In the sample below, subtopics are "Barriers to utilization" and "Strategies for overcoming barriers."

TYPE. Classification of each work by type (e.g., experimental study, theoretical analysis) is indicated in the upper right corner BELOW the main topic. A list of type classifications is given on page —. In the sample below, the type is "ANALYSIS/SUGGESTIONS."

DISTILLATION SECTION. The content of each annotation is classified according to headings from Chapter Three, "From Research to Practice: A Distillation of Findings and Principles." The distillation section numerals are in the parenthetical statement immediately following each reference citation. Section headings are:

I = The Problem of Research Utilization
II = Some Factors Which Condition Innovation
III = Ways of Improving the Linkage Between Research and Practice
IV = Facilitating Organizational Change

In the sample below, the classifications are III, and I. This means that the work fits primarily under section III, Ways of Improving the Linkage Between Research and Practice, and secondarily under I, The Problem of Research Utilization.

ANNOTATION SAMPLE

MAIN TOPIC → PROMOTION OF UTILIZATION
TYPE → ANALYSIS/SUGGESTIONS

DISTILLATION SECTIONS SUBTOPICS

Halpert, Harold P. Communications as a basic tool in promoting utilization of research findings. Community Mental Health Journal, 1966, 2 (3), 231–236. (III, I; Barriers to utilization, Strategies for overcoming barriers.)

SAMPLE

Innovators frequently do not write up their findings. Even if they do, dissemination of research results usually is insufficient to achieve utilization. Reports would be more useful if authors analyzed their research in terms of applicability to service programs. Other barriers: (ETC.)

(In general, the topics, subtopics, and types are drawn from the following lists)

TOPIC DESIGNATORS

CHANGE

- Change agents
- Models for change
- Opinions and attitudes concerning (during/in) change
- Organizational and institutional change
- Planning for change
- Process of change
- Resistance to change
- Strategies for effecting change
- Strategies for overcoming resistance to change

COMMUNICATION

- Community cooperation
- Educational diffusion/dissemination
- Promotional diffusion/dissemination
- Research diffusion/dissemination

GROUPS

- Use of groups for change

INFORMATION/KNOWLEDGE

- Classifying information/knowledge
- Disseminating / Diffusing information / knowledge
- Gathering information/knowledge
- Selecting information/knowledge
- Utilizing information/knowledge

INNOVATION

- Adaptation of innovation
- Adoption of innovation
- Characteristics of (innovative) persons
- Characteristics of (innovative) organizations
- Educational innovation
- Evaluation of innovation
- Industrial innovation
- Introducing innovation
- Mental hospital innovation
- Processes of innovation
- Rejection of innovation
- Response to innovation
- Technological innovation

LINKAGE

- Middleman role
- Organizational climate for change
- Organizational development
- Organizational factors involving innovation

RESEARCH-PRACTITIONER RELATIONSHIP

- Research-practitioner collaboration
- Research-practitioner gap

UTILIZATION

- Barriers to utilization
- Promotion of utilization

TYPES

(Located below TOPIC DESIGNATOR in upper right corner of each annotation)

CASE STUDY ANALYSIS
DEMONSTRATION ANALYSIS
DESCRIPTIVE ANALYSIS
THEORETICAL ANALYSIS
BIBLIOGRAPHY
CONFERENCE REPORT
COMMISSION STUDY
DESCRIPTION
EMPIRICAL STUDY
EXHORTATION
EXPERIMENTAL STUDY

FEASIBILITY
FIELD STUDY
HISTORICAL
INTERVIEWS
LABORATORY STUDY
MODELS
PILOT STUDY
PROGRESS REPORT

READINGS/REVIEW
RECOMMENDATIONS
SEMINAR REPORT
SUGGESTIONS
SURVEY
SYNTHESIS
THEORY AND PRINCIPLES

CHARACTERISTICS OF INNOVATIVE ORGANIZATIONS

SEMINAR REPORT

Abbott, Max C. Hierarchical impediments to innovation in educational organizations. In M. C. Abbott & J. T. Lowell (Eds.), *Change perspectives in educational administration.* Auburn, Ala.: Auburn University, 1965. (II; Educational innovation, Rejection of innovation, Organizational climate for change)

There exists in education a hierarchical bureaucratic structure that makes it difficult to decide when new programs are needed and inhibits their development. The authority in this structure is often based on charismatic characteristics, and emphasis is placed on the "rights" of administrators and the "obligations" of teachers. This structure tends to undermine the development of the teaching role. In order to produce a more innovative educational structure it will be necessary to alter the hierarchical organization which elevates the status of the administrative personnel.

USE OF GROUPS FOR CHANGE

CASE STUDY ANALYSIS

Adamek, R. J., & Dager, E. Z. Social structure, identification and change in a treatment-oriented institution. *American Sociological Review,* 1968, 33 (6), 931–944. (II; Process of change)

This hypothesis was tested and supported: that the success of people-change organizations is related to the extent to which inmates identify with staff members and with the organization itself. Three types of identification were distinguished: personal, positional and institutional. The source of data was a treatment-oriented, closed institution for delinquent girls selected on the basis of age, schooling and potential. Identification and change were measured by standardized psychological tests. Statistical analysis shows a significant positive relationship between identification and change. Identification is facilitated by a highly structured social environment with a variety of social control mechanisms. A comparison with unstructured programs shows that they are equally successful. It is suggested that male-female differences in psychology and socialization result in equal success of both types of programs.

ADOPTION OF INNOVATION

ANALYSIS

Adams, Richard N. Personnel in cultural change: A test of a hypothesis. *Social Forces,* 1951, 30, (2) 185–189. (II; Innovator characteristics, Introducing innovation, Introducers, Adopters, Linking roles)

Data from a historical community study in the town of Muguiyauyo, Peru was looked at to test Homer Barnett's hypotheses. Barnett challenged the theory that persons in prestige positions introduced new traits into a culture and theorized that (1) personal conflict was the key factor in an individual's introducing, borrowing and possibly inventing new traits and (2) the most common introducers are "the disgruntled, the maladjusted, the frustrated and the incompetent." Neither Barnett's study nor the author's used psychological diagnostic techniques on the innovators or adopters. The author's data did not validate Barnett's hypothesis as he found persons with prestige, who did not appear to be maladjusted, introducing more traits with more success. The author suggested that Barnett was studying groups which were breaking down, suffering economic collapse and undergoing a series of crises. This was not true in Muguiyauyo, where crises, when occurring, were being handled in "manners much more in line with the traditional activities of the society." There is data to support the belief that in rapid acculturation there are as many maladjusted conservatives as there are maladjusted radicals. The author concludes that Barnett's hypothesis may be useful when applied to societies which are rapidly and violently changing.

RESISTANCE TO CHANGE

CASE STUDY

Agnew, P. C., & Hsu, F. L. K. Introducing change in a mental hospital. *Human Organization,* 1960, 19, 195–198. (IV, II; Strategy for overcoming resistance, Organizational and institutional change, Adoption of innovation, Mental hospital innovation)

This article describes the process of introducing the innovation of patients wearing their own clothes throughout their stays in the hospital and the process of overcoming the resistance of staff and patients to this innovation. Techniques used by the psychiatrist to overcome resistance included encouraging the personnel to express their hostile feelings while presenting detailed solutions to the real problems involved in implementing the change, and by having special staff meetings to deal with problems resulting from the adoption of the innovation. The psychiatrists stated that originally the innovation was seen as threatening to the staff's self-reliance and self-respect (Americans are likely to resist change imposed on them by authority above), but that the meetings gave the staff an opportunity for involvement in the decision-making process. Patients came to accept the innovation because the idea of increased individuality provided fresh support and new directions for their self-esteem. The following implications are drawn: (1) resistance is to be expected when an innovation is introduced into an organization; (2) resistance can be reduced or eliminated if the pattern of equivalence between self-reliance and self-respect is taken into consideration; (3) a balance between maximized feeling of independence and the need for enforcing policy and authority is the most essential part of administrative technique in American socety.

CHARACTERISTICS OF INNOVATIVE ORGANIZATIONS

DEMONSTRATION ANALYSIS

Aiken, M., & Hage, J. *The relationship between organizational factors and the acceptance of new rehabilitation programs in mental retardation.* Washington, D.C.: Social and Rehabilitation Service (formerly Vocational Rehabilitation Administration), Report of Project RD–1556–G, Jan. 1, 1968. (IV, II; Organizational factors involving innovation, Organizational climate for change)

An intensive longitudinal study was made of 16 welfare rehabilitation agencies to discover organizational characteristics affecting innovation and those affecting staff cooperation. This interim report stated that the *rate of new program implementation* was highly and positively correlated with the following staff characteristics: number of occupational specialties, amounts of extra-organizational professional training, participation, decisionmaking, and job morale. It was negatively correlated with the amount of job codification and the satisfaction with expressive relationships. Amounts of professional training, hierarchy of authority, and rule observation, and several personality variables had little or no correlation. Agencies with many *cooperative relationships* tended to have similar characteristics to innovative organizations, with the addition of high frequency of committee meetings and high rate of program innovation. Government agencies seeking to award *demonstration grants* where they will be successful should consider organizations with many occupational specialties, large degrees of extra-organizational professional activity and participation in decisionmaking, and high job morale. Close supervision and rigidly defined job specifications should be relaxed. To avoid internal strains, the rate of program change should be constant. Contact between departments and between low-status and high-status staff facilitates innovation, as does staff perception of emphasis on new programs. Joint programs develop more often in research and education areas (rather than in service activities) and between complex organizations. Characteristics of a private agency's board of directors do not seem to affect innovation. The author's interim conclusions were ambiguous; perhaps an organization or several organizations should be granted funds to develop new programs and thereby allow increasing complexity to spontaneously aid cooperation; the needs of organizational autonomy and the goal of community coordination of efforts may conflict. A third objective of the study, to test predictions on joint programs, was unfulfilled because no such programs were developed.

DIFFUSING INFORMATION

SUGGESTIONS

Albaum, Gerald. The hidden crisis in information transmission. *Pittsburgh Business Review,* July 1963, 33, 1–4. (I, III; Utilizing information, Selecting information, Barriers to utilization, Gathering information)

In most business firms there is more information available than is being used. Often this problem is neglected since many executives would rather have "more information" than make better use of what they have. Information may be either external or internal, planned or unsolicited. The decisionmaker has received planned information because he has asked for it, but unsolicited information will become known only by chance. Unsolicited information is the major problem discussed by the author. Causes of inadequate transmission of information may be: organizational lag if the company has not changed its performance of the information activity; the human element since often decision-makers do not know what information they need, or do not know where to get it; people with information may not know who else needs it. Remedies for the problem include maximizing the amount of planned information through systematic research, recognizing the problem of lag and the human element and thus improving the information system. The system can be made more efficient by (1) educating employees to their information transmission roles and (2) developing formal search procedures. An efficient information system should maximize the knowledge of the existence of information by potential users, maximize knowledge of potential users, reduce chances of distortion or bias during transmission, and reduce the time involved in movement of information to the user. A *centralized company information system* would therefore seem to be the best solution to transmission problems provided the operating units who possess unsolicited information feed it into the system.

PROCESS OF CHANGE

THEORETICAL ANALYSIS

Allen, Francis, et al. *Technology and social change.* New York: Appleton-Century-Crofts, 1957. (II; Institutional change, Resistance to change, Technological innovation)

It is proper for sociology to study technology as it affects groups, habits, and institutions of society. Technological change can influence both the direction and rate of social change. Instead of seeking a general theory for the overall process of change, the sociologist now seeks the subprocesses of change within a particular society. To illustrate the social effects of major inventions, the automobile, motion pictures, radio and television, aviation, and atomic energy are examined. Influences of technology on social institutions are analyzed through the study of industry, systems of communication and transportation, the family, agriculture, war, and medicine. A side effect of rapid social change may be a cultural lag, where the change of two related cultural elements is not in tune to benefit society; an example is the rapid development of mass-destructive military technology and the slow development of international systems of law-and-order. We are now in great need of more rapid, reliable and widespread social research into social innovation and the effects of technology.

INFORMATION GATHERING SUGGESTIONS

Allen, Layman, E. Beyond document retrieval toward information retrieval. *Minnesota Law Review,* April 1963, 47, 713–767. (I; Technological retrieval, Promotion of utilization, Legal information retrieval)

As one step in the direction of more explicitly defining the role of computers in law (information retrieval) Professor Allen presents a specific proposal for improving the drafting of legal documents so that some of the logical analysis of the contents can be performed automatically. He then applies this proposal to sample sections of the federal estate tax. A few of the kinds of questions to which answers may be found mechanically when the statute is systematically organized are: (1) given that a specified set of conditions has been fulfilled, what consequences (if any) follow?; (2) given that a certain consequence does not follow from a specified set of fulfilled conditions, what additional conditions must be fulfilled in order for that consequence to follow?; (3) given a certain fulfilled condition, what are all the consequences that have that condition included in their antecedent?; (4) given that a certain condition is not fulfilled, what are all the consequences that are prevented from following?

INFORMATION DISSEMINATING CASE STUDY

American Psychological Association. *A comparison of scientific information-exchange activities at three levels of psychological meetings.* Washington, D.C.: Project on Scientific Information Exchange, American Psychological Association, December 1963. (I; Information gathering, Information selecting, Information diffusing)

This paper is concerned with two central questions related to information-exchange at three levels of psychological meetings: (1) did the attendants bring specific problems to the convention in the hope of finding the information? and (2) did attendance furnish the visitor with any information that could be expected to exert a significant effect on his work activities? Findings indicate that slightly more than half the attendants at each type of meeting were looking for specific information. At the State meetings attendants were more often seeking professional (clinical) information, while at the larger meetings they more often sought scientific (research) information. The data revealed that fewer attendants at the smaller meetings obtained significant information than did attendants at the larger meetings. Contributed papers are a more frequently mentioned source of significant information at the State meetings, while at the regional meetings papers and symposia are mentioned equally often. At the national meetings, symposia are mentioned three times as often as contributed papers.

INFORMATION DISSEMINATING
CASE STUDY

American Psychological Association. *Convention attendants and their use of the convention as a source of scientific information.* Washington, D.C.: Project on Scientific Information Exchange in Psychology, Report No. 4. American Psychological Association, August 1963. (I; Information gathering, Information exchange, Information diffusing, Information linkers)

Beginning with the premise that "conventions serve as an important channel for rapid and immediate exchange of scientific information," four meetings of psychologists were studied in 1962 to determine the characteristics of attendants, their use of the conventions to obtain information, and the function and characteristics of programmed and informal events as sources of information for attendants. Although working time was spent in clinical work, research, and teaching in that order, almost half the respondents stated that research "required the greatest effort to gather and use scientific information." Specific information sought most often concerned problems of method, procedure, or apparatus. Symposia (35%) and informal discussions (35%) were the model sources of "most-significant" information obtained at the APA convention in contrast to contributed papers (13%) and invited addresses (5%). "Considering the preponderance of time given over to contributed papers on the APA program, it is disturbing to learn that 87% of the sample found information of greater significance in other program events . . . it is not clear whether the 87% listened in vain for significant information at paper sessions or simply failed to attend such sessions at all."

INFORMATION DISSEMINATION
CONFERENCE REPORT

American Psychological Association. *Convention participants and the dissemination of information at scientific meetings.* Washington, D.C.: Project on Scientific Information Exchange in Psychology, Report No. 5, American Psychological Association, August 1963. (I; Promotion of utilization, Dissemination conference, Information exchange, Knowledge diffusion)

This study focuses on an analysis of whether regional, national and select meetings have different roles in scientific information exchange. Locating the convention presentation in the series of events from the inception of a research project to its final reporting in the archives, determining the timing of the series of events, and locating other methods of disseminating convention presentations and their timing schema are the central purposes articulated in this report. Analysis includes: investigating the result of the presentation to a scientific meeting and any feedback therefrom on the author's subsequent work; and determining the effect of the presentation on further dissemination. Findings reveal that types of meetings differ in that they emphasize different subject areas. Almost all participants reported some post-presentation discussion of their papers. As a result of all discussions, about a third of the participants reported some modification in their plans for publishing papers, and designing subsequent research.

RESISTANCE TO CHANGE
LABORATORY STUDY

Anderson, L. R., & McGuire, W. J. Prior reassurance of group consensus as a factor in producing resistance to persuasion. *Sociometry,* 1965, 28, 44–56. (IV; Strategies for change, Communication of ideas, Diffusion of knowledge, Opinions and attitudes in process of resistance)

Ninety-six students from a general psychology class were selected to test the notion that a highly reassuring defense confers less resistance to a subsequent persuasive attack than does a more threatening defense. What the individual needs in order to develop resistance is not a reassuring defense telling him the reasons his belief is true, but a threatening defense that makes him realize the belief's vulnerability. Findings were: (1) individuals exposed to messages containing supportive arguments for currently held beliefs are more vulnerable to attempts made to change their beliefs; (2) individuals become more resistant to persuasion attempts when they are presented with arguments against their beliefs, even if the arguments are not the ones used in the persuasion attempt; (3) when individuals are presented with arguments that are to be used again in attacking their beliefs, they are most resistant to attempts to persuade them to a position other than the one they hold.

RESEARCH DIFFUSION

SURVEY

Anderson, O. W., & Seacat, M. S. *The behavioral scientists and research in the health field: A questionnaire survey.* New York: Health Information Foundation, 1962. (III; Research-practitioner collaboration)

A survey was conducted among behavioral scientists conducting research in the health field. Findings indicated: majority of workers had Ph.D.'s, most workers were graduates of one of five specific universities, their major field of study was overwhelmingly sociology, research projects are based mainly in universities, workers expressed satisfaction with their positions, and relationships with health personnel were conducive to research. The author suggests that the status of the behavioral scientist be on a level with the health researcher, and the behavioral scientist be trained to work and communicate with people outside his field.

ROLE OF CHANGE AGENT

RECOMMENDATIONS

Anderson, Richard C. The role of educational engineer. *Journal of Educational Sociology,* 1961, 34, 377–381. (III; Linking roles, Middleman role, Promotion of utilization)

The author proposes a new role in educational training, the educational engineer, whose function is to convert the scientific principles formulated by the basic researcher (he defines basic research as "any enterprise to isolate variables and determine relationships among them") into "social inventions" which practicing teachers may understand and use. The educational engineer could develop a "teaching program" for every level and subject by isolating the desired outcome, analyzing its component concepts, applying the findings of Skinner and others and considering the variables of student background and teacher capabilities. He would be able to construct a "flow chart" which would specify each phase of teaching behavior and would link the various phases to the whole. Diversity and creativity can be accommodated by providing supplemental "branch" cycles of teaching behavior on the flow chart. His primary assumptions for such a plan are that (1) personal interaction between the teacher and pupil is important (TV, textbooks, etc., should be eliminated) and that (2) a high predictability of pupil response for each teacher act can be reached. In the most advanced sciences, most progress has been made through trial-and-error; this is even more true in the behavioral sciences. Therefore, the assumptions at the base of a workable teaching program will need much time and trial for refinement. The author points out, however, that if education continues to depend upon extemporization by teachers to bridge the gap between research and practice, principles of learning are bound to be reduced to trivial generalities.

SCIENTIFIC INNOVATION
DESCRIPTIVE ANALYSIS

Andrews, F. M., & Farris, G. F. Supervisory practices and innovation in scientific teams. *Personnel Psychology,* 1967, 20 (4), 497–516. (II; Organizational factors involving innovation, Organizational climate for change)

This paper reports results of two analyses exploring the relationship between supervisory practices and scientific performance. A key preliminary question was whether the supervisory mattered at all. When performance was measured in terms of innovation, the answer was "yes": systematic differences between supervisory groups were clearly evident. Further, these differences were related to supervisory practices. While firm statements of cause and effect are not appropriate with these data (NASA research center—21 teams of 94 nonsupervisory scientists), the findings do suggest that the supervisor may play an important role in enhancing or depressing innovation. Greatest innovation occurred under supervisors who knew the technical details of their subordinates' work, who could critically evaluate that work, and who could influence work goals. If a supervisor's technical competence has become obsolete or less favorable conditions surround the work situation, the data suggest providing substantial freedom for subordinates. Freedom is identified as a partial substitute for skilled supervision. For freedom to be effective the data indicate that the supervisor must consult with his subordinates before making some kinds of decisions. It was found that innovation tended to be *low* when supervisors were thought to be effective at human relations or administration, and especially low when supervisors were effective at both. In fact, freeing supervisors from responsibilities in the human relations and administrative areas may enhance innovation.

CHARACTERISTICS OF INNOVATIVE PERSONS
EXPERIMENTAL STUDY

Andrus, Roman Raphael. *Measures of consumer innovative behavior.* (Doctoral dissertation, Columbia University) Ann Arbor, Mich.: University Microfilms, 1965. No. 65–11,075. (II; Adoption of innovation, Innovative behavior, Response to innovation)

This study measured several aspects of innovative buyer behavior. Ownership of 10 consumer durable products was used in calculating the innovativeness scores for each of 11,200 families. The earliness of acquisitions, the frequency or number of new products acquired, and the type of products acquired were considered. All of the innovativeness measures demonstrated a high degree of intercorrelation. A basic assumption of many diffusion researchers is that innovativeness is normally distributed in the population. None of the measures of innovativeness calculated in this study demonstrated distributions which could be expected to have come from a normally distributed population. For the examined class of consumer durable goods it appears that the use of a normal distribution model as a basis for classifying buyers is not presently justified. Demographic characteristics as well as purchasing behavior are useful in identification of consumer innovativeness. Several demographic characteristics which vary with the measures of innovativeness were identified. Income was by far the most important, followed by education and home ownership. Marketing management formulating of new product promotion and distribution strategies should find it valuable to identify consumer innovativeness in terms of product acquisition behavior *and* in terms of demographic characteristics. While an understanding of consumers' innovative behavior is helpful in reducing the risks of new product introduction, that data on innovativeness should be supplemented with information regarding many other aspects of buyer behavior if new product marketing is to yield to reliable management decision-making.

BARRIERS TO UTILIZATION
ANALYSIS

Anonymous. Application of the Results of Research, *Chemistry and Industry,* July 22, 1961, 1123–1125. (III; Promotion of utilization, Linking agent)

The author discusses some of the problems connected with the lag between research results and their application. In industry the author feels the main reasons for utilization lag are limited financial resources, prospects of profitable use, and required capital expenditure. Those utilizing defense research are far from being slow in adopting new inventions and discoveries. However, other government research needs clearer and simpler report writing and more practical trials and demonstrations to prove the utility of new ideas. The author suggests that industry needs to recognize the problems which it faces, to appreciate the benefits relevant research findings offer, and to provide the necessary funds for beneficial application. One of the possible solutions to this problem is the appointment of specially qualified and trained liaison officers and the allocation by the government body of a greater percentage of its budget to research utilization.

INDUSTRIAL INNOVATION
CASE STUDY

Anonymous. Who are the innovators? *Economist,* February 15, 1958, 186, 596–598. (II; Inventor linker, Characteristics of innovators, Research and development process)

It was observed by the researcher in this article that modern society is working on the assumption that technical progress is directly related to the amount of money and manpower invested in research and development. New products and processes are assumed to flow systematically, if not automatically, from industrial research departments. Another assumption is that to provide more trained people with yet more resources in research institutions will guarantee the continuance, if not the acceleration, of a pace of technological upsurge which we take to be already faster than ever before. To test these assumptions, 61 20th century inventions were traced to their origins. Thirty-three were found to be invented by individuals working with complete freedom, alone or in research-institutions and 21 came from institutions where research is guided toward defined ends; the remainder had such mixed origins as to defy classification. The author recognized that such a study must necessarily be qualitative, selective and impressionistic, more historical than scientific. No attempt was made to measure the significance of the innovation. However, it is felt that the freelance inventor rated more support than he is currently getting, perhaps by establishing linkers between him and industry, who might funnel his invention to the proper customer and also inform the inventors of industry's needs.

INFORMATION GATHERING
SURVEY

Appel, J. S., & Gurr, T. Bibliographic needs of social and behavioral scientists: A report of a pilot survey. *American Behavioral Scientist,* 1964, 7 (10), 51–54. (I; Information retrieval, Barriers to utilization, Information services)

Authors did a survey of information problems and needs of social scientists. Results showed that most of the participants had encountered difficulties with existing information services, had missed valuable information through faulty searching, or obtained their information haphazardly. Most did not know of or did not take full advantage of existing services.

Few had suggestions for alternative bibliographic systems and on the whole there was a lack of interest in the problem. Many did see the need for improving bibliographic techniques in the social sciences if the growing information demands in the field are to be satisfied.

UTILIZING KNOWLEDGE

THEORETICAL ANALYSIS

Archibald, Kathleen. *The utilization of social research and policy analysis.* (Doctoral dissertation, Washington University) Ann Arbor, Mich.: University Microfilms, 1968. No. 68–10,771. (I, III; Social science typology, Change agent, Advisor role, Educator role, User audience, Implementors, Future implementors, Transactions and trade-offs)

The author explores diverse approaches to the activity termed social science. She develops a detailed typology of orientations for applied social scientists: *the academic, the clinical,* and *the strategic.* Conditions are specified (role of change agent, role of advisor, role of educator) under which one typological orientation is more appropriate than another in effecting research utilization. Applied science is a low status, marginal member of the science system because many of its norms, involving user orientation, are different from those of the science system which is oriented toward fellow scientists or students. Were a reference group of other applied scientists to develop, such a group could provide criteria of legitimacy for applied science as well as criteria for the quality of applied science. Considering the user audience the distinguishing characteristics of social science, the author defines various consumer roles and explores them according to their possible relationships to applied scientists. Under roles are: *target systems,* the entities which are supposed to be changed or affected by the expert; *implementors,* relatively autonomous decision-making people or social units who give effect to or expression of expert's knowledge; *public audience,* the others who neither implement nor are targets but serve as transmission channels, and *future implementors,* individuals who produce long-term nonspecified results. Consequences of the applied social scientist's orientation are discussed in terms of transactions (between scientist and user audience) and tradeoffs. For the transaction to be complete there must be some utilization of the knowledge produced. Autonomy is the salient variable in the use of knowledge phase.

OPINIONS AND ATTITUDES CONCERNING CHANGE

THEORY AND PRINCIPLES

Arensberg, C. M., & Niehoff, A. H. *Introducing social change.* Chicago: Aldine, 1964. (II; Change agent, Planning for change, Resistance to change, Strategies for effecting change, Adoption of innovation)

The purpose of this book is to be a manual for an American change agent in undeveloped countries. National sovereignty is now the predominant force in these countries so change must be accepted voluntarily by the people. In order to direct change different elements of people's culture must be understood, including language, technology, economy, social organization, supernatural beliefs, and values. Competition between people of different cultures is the motivation for modernization. People will adopt innovations which benefit them and fit the pattern of their culture. The recipients should be involved in all stages of innovation, and adoption of the innovation is not complete until they are in control. The change agent should not let his own culture lead to misinterpretation of other people's behavior.

MIDDLEMAN ROLE
DESCRIPTIVE/EXPLORATORY

Argyris, Chris. Explorations in consulting-client relationships. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 434–456. (IV; Organizational climate, Organizational change, Change agents, Resistance to change, Introducing change)

Organizational consultants face difficulties because of their marginal positions in an organization. Suggestions are made to organizations and consultants about ways to overcome these difficulties. The objective of consultants is to promote interpersonal competence, that is, to enable the clients to give and receive feedback with a minimum of defensiveness. To succeed, the consultant himself must behave according to this value. Such consultant behavior is often threatening to the client and contradictory to his values. If the consultant adopts the client's values and acts in a defensive manner in order to gain acceptance, he risks failure. This is a major dilemma; two case histories serve as illustrations. In addition to this discrepancy of values, another factor which influences the consultant-client relationship is: the division of the organization into those who are aware of and/or wish, and those who are unaware of and/or do not wish to bring about effective change. The invited consultant often has to "straddle" a series of overlapping, conflicting, and at times antagonistic, subcultures. Organizations should develop a climate where consultants can express their values. The following kinds of conditions promote a good relationship: the consultants (1) may never become part of line management; (2) have their own professional salary scale as do medical directors; (3) may never be fired for focusing on such processes as openness and authenticity; but (4) may be dismissed if they are judged by their professional colleagues to be incompetent; and (5) may be dismissed as part of the organization to the extent that it is coercing their behavior against their better judgment.

ORGANIZATIONAL CHANGE
SURVEY/RECOMMENDATIONS

Argyris, Chris. Interpersonal barriers to decision making. *Harvard Business Review,* March-April 1966, 84–97. (IV; Barriers to utilization, Resistance to change, Organizational climate for change)

Executives often fail to follow their own prescriptions for effective action. They claim that the degree of innovation, risk taking, flexibility and trust in the executive system determines the effectiveness of decision-making. Yet a study of executives in six companies showed two basic behavior patterns, both competitive and lacking in trust, risk-taking, etc. Three basic values were analyzed from the study: organizational objectives are primary; emotional discussions are not work, only intellectual discussions are; and human relations are best influenced unilaterally from above. All this leads to ineffective decision-making, lack of awareness of the real situation in the company, and distrust and antagonism. The more important a decision is, the more likely it is that ineffective methods will be used, causing effective, committed executives to get upset. A number of superficially logical but ineffective means of altering executive behavior are discussed. A changed situation is necessary, where the executive can assess himself and his leadership style and learn at his own pace and depth. Effective learning methods are discussed, including going over taped sessions, laboratory training, T-groups, etc. Awareness of organizational decay should be brought out and discussed.

CHARACTERISTICS OF INNOVATIVE ORGANIZATIONS

SURVEY/ANALYSIS

Argyris, Chris. *Organization and innovation.* Homewood, Ill.: Richard D. Irwin, 1965. (II, IV; Characteristics of innovative persons, Resistance to change, Organizational change)

A new set of categories of human behavior is applied to studies of research and development organizations to test the relation between interpersonal competence and problem solving effectiveness. The categories involve openness, risk taking, internal commitment, individuality, and concern for truth. Pyramidal values of behavior including conformity and suppression of feeling are held detrimental to creativity by scientists. Results of studies made by questionnaires, interviews, and problem-solving meetings are outlined. An attempt to change the values and behavior of a board of directors is described. A model of the probable relationship between interpersonal competence, internal organization, environment, and innovation is proposed and an appendix gives a detailed description of the categories used. Another appendix probes interobserver reliability questions. A third appendix includes a study of the use of the system of categories to quantify individual and group interpersonal competence which is held crucial to creativity and innovation in a research organization.

ADOPTION OF INNOVATION

INTERVIEWS/EMPIRICAL STUDY

Arndt, Johan. New product diffusion: The interplay of innovativeness, opinion, leadership, learning, perceived risk and product characteristics. Unpublished paper, Graduate School of Business, Columbia University, New York, 1968. (II; Promotional communication, Response to innovation, Diffusion of consumer products, Innovativeness, Opinion leadership)

The author studied innovations (specifically, consumer products) differing in complexity and risk involved in adoption to determine the interplay of factors affecting diffusion. He found a positive relationship among innovativeness, opinion leadership and learning. These three variables were negatively related to perceived risk in the adoption of new products. That is, early buyers had more experience and familiarity with the product and were more likely to exert personal influence. As complexity and risk increased so did the overlap of innovativeness and opinion leadership. He also found that the more similar the products, the more likely an overlap of innovativeness, opinion leadership and learning.

PLANNING FOR CHANGE

THEORETICAL ANALYSIS

Aronson, J. B. Planning for community health services. *Public Health Reports,* 1964, 79 (12), 1101–1106. (IV; Organizational change, Gathering information; Strategies for effecting change, Introducing innovation, Health service innovation, Community cooperation)

The wide range and complexity of present-day health problems lead to the need for organized community efforts to effect solutions. To treat an individual with a disease or disability today, requires the cooperation of many agencies and persons. Existing community health services are often poorly organized and there is both duplication and overlapping of public and private services. If the need to plan for community health services is realized, a self-study method can be employed. Steps involve the examination of community health needs and services, the delineation of areas where action is needed, the consideration of alternative solutions to problems raised, and the implementation of action to meet goals set.

Choice of appropriate community leadership is essential, as is the use of professional consultation available through existing health services. The self-study method can lead to an understanding of the structure of health services and to a system of improved services based on a pattern of community decision-making.

CHARACTERISTICS OF INNOVATIVE PERSONS

SURVEY

Back, Kurt W. The change-prone person in Puerto Rico. *Public Opinion Quarterly,* Fall 1958, 22, 330–340. (II; Personality factors and change, Attitudes for change, Change-prone attitude)

This study analyzes the interviews of 405 adult respondents from 242 households in Puerto Rico. The respondents were selected from uncleared slum areas, or housing projects. The interviews included a structured questionnaire covering personal data, attitudes and knowledge about housing projects and current housing conditions and aspirations. In addition a role-playing test to measure creative behavior and a sentence completion test to measure optimism-pessimism and ambition-resignation were given. Also drawn from the questionnaire were indices of traditionalism, modernism and mobility. The results seem to indicate that modernism (orientation toward the future) is centrally related to personality and behavioral indices. Creativity was closely associated with modernism; so also was proneness to accept change. In terms of economic variables, "changers are more likely to be men, a little younger, and better educated."

ORGANIZATIONAL FACTORS INVOLVING INNOVATIVE IDEAS

EMPIRICAL STUDY

Baker, Norman R. *The influence of several organizational factors on the idea generation and submission behavior of industrial researchers and technicians.* (Doctoral dissertation, Northwestern University) Ann Arbor, Mich.: University Microfilms, 1965. No. 65–12,046. (II, IV; Attitudes concerning change, Organizational climate for change)

The objective of this study was to investigate the *idea generation and submission behavior of researchers and technicians* in one large industrial research and development laboratory. A major portion of the data was collected from participants in three separate "idea generation groups" (IGGs). IGG's were conducted by the laboratory for the purpose of generating ideas with respect to a specified objective. It was found that perceived time pressures due to current work influenced idea originator behavior by focusing thinking on the current work and by modifying perceptions of the intrinsic and extrinsic rewards and costs associated with idea generation and submission. When the current work was the regular work of the researchers and technicians, perceived time pressures tended to stifle ideas not associated with the current work and to increase the perceived costs and/or decrease the perceived rewards which would be associated with taking time and effort from the regular job for idea generation and/or submission. The result was that perceived time pressures due to regular work stifled ideas before generation, before submission, and after submission. When the current work was IGG work, perceived time pressures apparently directed the attention of the participants toward generating ideas relevant to the IGG objective. Management's behavior with respect to previously submitted ideas was found to influence the perceptions held by the researchers and technicians of the rewards and costs associated with idea generation and submission. Apparently the researchers and technicians at the laboratory perceived that ideas relevant to organizational goals, objectives, and needs were more likely to be rewarded by the organization than nonrelevant ideas. Support was found that perceptions of organizational goals, objectives, and needs tended to stimulate ideas perceived to be relevant to these goals, objectives, and needs, and to influence which ideas would be submitted. Researchers and technicians formed their perceptions of organizational goals, objectives, and needs partially by interaction with other laboratory personnel (support) and management's behavior with respect to previously submitted ideas (weak support). In summary, perceived time pressures due to current work, intrinsic and extrinsic rewards and costs, organizational goals, objectives, and needs, and interaction are critical in explaining, understanding, and predicting some important aspects of the idea generation and submission behavior of industrial researchers and technicians.

ORGANIZATIONAL CHANGE
ANALYSIS

Balogh, T. The strategy and tactics of technical assistance. *Public Administration,* Winter 1959, 37, 327–342. (IV; Planning for change, Planning role, Institutional factors of change, Linking institutions for change, Change strategy)

The United Nations technical assistance programs are not as effective as they could be. Basically, no general, comprehensive, long-range planning is done in the countries that the United Nations assists. There are several reasons for this lack of planning. First, nations which need help most are those least able and willing to plan for it; and the United Nations agencies leave basic planning to the country involved. Second, the financing arrangements which are uncertain from year to year in the United Nations, prevent long-range programs from being undertaken. Third, the United Nations has no central coordinator or regional planner to draw up long-range plans for a nation; instead, it has many competing agencies which tend to be concerned only with their sector of the economy and, as a result, sometimes make conflicting plans. In addition, there is a great deal of inefficiency in the duplication of effort in information gathering and survey-taking. Finally, "experts" are relied on to implement their plans, yet often they have no diplomatic skill or political sense. The author suggests the need for a central planning role in the United Nations which would balance the programs of the various agencies and actively advise national governments. Letting governments do their own planning "is fundamentally inappropriate for the optimum use of resources." A system of long-range funding is a strong recommendation.

USE OF GROUPS FOR CHANGE
EXPERIMENTAL STUDY

Balser, B. H., Brown, F., Brown, M. L., Laski, L., & Phillips, D. K. Further report on experimental evaluation of mental hygiene techniques in school and community. *American Journal of Psychiatry,* 1957, 113, 733–739. (II; Strategies for effecting change, Opinions and attitudes concerning change, Characteristics of persons in change)

This study was carried out on workshop groups of teachers and parents using matching control groups. Groups were evaluated by various psychological tests given before and after the workshops. Findings were: experimental groups showed more positive change than control groups, parents showed greater change than teachers, different approaches of the two group leaders made no difference, morale of the groups showed no change, the workshop is more suited to volunteer participation than random selection, and an attitude evaluation rather than "adjustment" evaluation may be advisable in future studies.

PLANNING FOR CHANGE

RECOMMENDATIONS

Barbe, Richard H., & Hall, R. M. The effects of planned change on national agencies. *Theory into Practice,* 1966, 5 (1), 54–57. (IV; Change strategies, Institutional change, Organizational change)

The degree of specificity in planning or prescription which any organization can engage in is determined as a compromise between two factors: the strength of the organization and the amount of reaction produced. A powerful national agency brings great opposition when it plans specific changes, whereas local groups can make such specific plans without opposition. Thus, national agencies (public and private) can introduce change if they use their power to push relatively nonspecific goals in response to generally felt needs. They are trying to introduce change at "lower levels" where a need is felt; the more specific the need, the lower the level that should be active in planning the change. Local agencies can more easily involve in planning those individuals who will be affected by the changes. National agencies can play an important role by setting general guidelines for change and by supporting local agencies in making more specific plans.

DIFFUSING OF INFORMATION/ KNOWLEDGE

ANALYSIS

Barbichon, Guy. The diffusion of scientific and technical knowledge. *Journal of Social Issues,* 1968, 24, 5–12. (I, III; Characteristics of persons, Factors affecting knowledge transmission, Attitudes toward scientific knowledge, Mass media in developing countries)

Barbichon asserts that in order to examine the problems raised by (a) the acceptance of information likely to modify attitudes and knowledge, and (b) the intensity and specificity of these modifications, we first need to analyze the attitudes toward knowledge and sources of knowledge. Further, we need to examine the cognitive processes by which we integrate scientific and technical knowledge. This article is directed toward an analysis of these factors and how an awareness of them can be utilized in mass media campaigns in developing countries. Many studies indicate that scientific notions and ideas acquired during formal education prevent the integration of new scientific information into the practice of one's profession. There are theoretical, technical and practical types of knowledge. The cognitive exploration involved in the acquisition of new knowledge depends on both individual and social system norms concerning each of the three types of knowledge. The existence of both interindividual and intercultural differences in cognitive styles makes it necessary to identify the basic elements of these styles, e.g., the relative importance of analytical and synthetic processes, of differentiation and integration; the normative form of access to knowledge (memorization, library, etc.); the ideas pertaining to the possession of knowledge (erudition vs. encyclopedism vs. ability to solve problems). Both the individual's cognitive style and that of the social system within which he operates affect his receptivity to new knowledge. Other factors affecting knowledge transmission are the attitudes of the knowledge-emitter toward his potential receivers. The knowledge-emitter's image of the receiver's needs, cognitive styles, abilities, etc., affects the communication process. Restrictions placed by the emitter may be due to size of audience, content of the message, or cognitive supports of the message, as well as his image of the potential receiver.

STRATEGIES FOR EFFECTING ORGANIZATIONAL CHANGE

THEORETICAL ANALYSIS

Barnes, Louis B. Approaches to organizational change. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 79–84. (IV; Organizational factors involving innovation, Organizational change, Organizational climate for change)

A review of organizational change describes what is being changed and how it is being changed. There are four main variables in what is being changed: task; people; technology; and structure. Differences in power distribution can affect how the changes will be initiated and implemented. Two typologies of change styles are presented. The factors of power distribution and of participation in goal setting, and the various combinations of these factors are the criteria for different change styles. One typology of change styles is: planned change; indoctrination change; coercive change; technocratic change; interactional change; socialization change; emulative change; and natural change. The second typology is: decree approach; replacement approach; structural approach; group decision approach; data decision approach; group problem-solving approach; and T-group approach. These approaches move from unilateral power to mutually shared power. Although the decree approach is more prevalent in industry, a survey of the literature shows increasing emphasis on shared power approaches. Large-scale efforts at change are associated with attempts to effect mutually shared power.

PROCESS OF CHANGE

THEORETICAL ANALYSIS

Barnett, Homer G. The acceptance and rejection of change. In G. K. Zollschan & W. Hirsch (Eds.), *Explorations in social change.* Boston: Houghton Mifflin, 1964. Pp. 345–367. (II; Response to innovation, Opinions and attitudes during change)

The author develops a paradigm in which the *acceptance-rejection* possibilities in any given confrontation of a person with a message may be systematically and exhaustively explored. Whether a new message (an innovation) will be accepted or rejected depends on many factors. First, it depends on the structural demands of the language and the resultant relationships inherent in the message. Second, and most important, this message must "make psychological contact with some antecedent experience of its potential acceptor or rejector." This may result from actual identity, from some shared elements, or it may be imposed by definition (i.e., "let us say A = X".) Third, either assimilation or projection must occur to complete the acceptance-rejection process. The former consists of fitting the new message into the context of relationships surrounding its familiar elements. The latter occurs when the familiar parts of the new message are completely replaced by their previously experienced counterparts without regard to actual equivalence. In addition, the author discusses the concept of "value" and points out that actual acceptance or rejection is based on the individual's values and preferences. Finally, the author produces a nine by nine matrix giving the 81 "inflections on the rejection-acceptance process."

ADAPTATION OF INNOVATION

SYNTHESIS

Barnett, Homer G. *Innovation: The basis of cultural change.* New York: McGraw-Hill, 1953. Pp. 329–377. (III, II; Response to innovation, Models for change, Introducing innovation)

A novelty has intrinsic (inherent value as perceived by the potential acceptor) and extrinsic (actual value and acceptability) values. The acceptance of an innovation involves creative modification of the original and is thus an innovation itself. A novelty must have some "meaning" or be "associable" to its acceptor—"some kind of orientation with reference to the background of the individual. . . ." A novelty has a different meaning for its innovator and its acceptor. An innovation will be rejected if the orientation has a large negative factor—for example, Yurok Indians refused to use rice because it looked too much like maggots to be regarded as food. Novelties that complement existing situations or are totally self-contained are less likely to be rejected due to negative identification. Wearing clothes, and using European obstetricians while refusing native nonrelative midwives during childbirth are cited as examples. Innovations are adopted by assimilation or projection, depending on whether the adoption process is done unconsciously or consciously. Assimilation is most likely if there is nobody saying how a novelty "ought" to be used.

PROCESS OF CHANGE
THEORETICAL ANALYSIS

Barnett, Homer G. Laws of socio-cultural change. *International Journal of Comparative Sociology,* September 1965, 6, 207–230. (II, III; Resistance to change, Function of innovation)

The purpose of this article was to explore the circumstances which hamper the formulation of laws of socio-cultural change. The author discusses first the problems connected with human research; these include the resistance of the human to being studied, his belief that he already knows himself. A second problem is the slowness of the social sciences to clarify and organize the terminology and methods to the precision required by exact sciences. Some areas of social science concentrate upon the interrelationships of the parts so that the precise definition of separate "things" is impossible. The alternative proposed by the author is the substitution of laws based upon process. Advantages of the use of this construct would be that it could be made to repeat itself, has distinct components, and can be stated as a formula. The author believes that our knowledge of social process, while still limited, is more extensive than we are aware. A person's ability to predict the behavior of others in everyday life is based upon knowledge of social process. The author concludes that social change is the possible product of some processes. Innovation itself is a process which facilitates the change.

DIFFUSION OF INFORMATION/KNOWLEDGE
INTERVIEW

Bassett, G., Davison, W. P., & Hopson, A. L. *Social scientists, university news bureaus, and the public: Some factors affecting the communication of social science information.* New York: Graduate School of Journalism, Bureau of Applied Social Research, Columbia University, March 1968. Prepared for the Russell Sage Foundation. (III, I; Information flow to mass media, Communication between social scientists and public or colleagues)

Using information from interviews of members of the Sociology departments at six universities listed as having superior Social Science faculties, the authors examine factors affecting the flow of social science information to the mass media. The authors concluded that almost all of the sociologists interviewed were ambivalent about communicating the results of their work to the public. Though the sociologists felt that the public had a right to know what social scientists were doing and thinking, many of the interviewees said they simply could not find time for communicating. Communication with colleagues, however, did not cause ambivalent feelings.

OPINIONS AND ATTITUDES CONCERNING CHANGE

CASE STUDY ANALYSIS

Baur, E. Jackson. Cultural factors affecting the use of research by welfare agencies. Unpublished paper, University of Kansas, Lawrence, Kans., 1957. (IV, III, II; Planning for change, Organizational and institutional change, Resistance to change, Barriers to utilization, Promotion of utilization, Use of groups for change, Characteristics of innovative organizations)

Five private welfare agencies were chosen for study to determine the cultural factors associated with adaptability in organized groups. Each agency had both considered important changes in programs and utilized services of a research organization. Each agency differed in the use they made of the research organization's recommendations. The three cultural factors studied were: (1) adherence to a sacred or a secular ideology by agency board members, (2) conflicts between the values of the research organization and the values of the client, and (3) relative importance which the board members placed on the agency as a group as compared with the values they placed on the programs conducted by the agency. The study found that agencies use research more effectively if: (1) the board adheres to a secular philosophy which expects and plans for change, and views absence of change as lack of progress, (2) client and research organization share the same values that are pertinent to the problem under consideration, and (3) the value which the board places on the agency as an organized group is greater than the value which it places on the specific programs conducted by the agency.

COMMUNICATION/PROMOTIONAL DIFFUSION

EXPERIMENTAL STUDY

Beal, G. M., Klonglan, G. E., Bohlen, J. M., & Yarborough, P. *Communication impact.* Ames, Iowa: Department of Sociology and Anthropology, Iowa State University, Rural Sociology Report No. 41, 1967. (II; Disseminating information, Utilizing information, Adoption of innovation, Barriers to utilization)

In this study a generalized model of communication processes was operationalized on a sample population and its predictability was tested. The model proposed three stages through which a message must pass to be decoded by the receiver: attention, comprehension, and acceptance. At each of these stages the receiver may drop out, cutting off communication, or the message may be distorted. The response of the receiver at each of these stages is not random but may be determined by the receiver's predispositions. In the test of predictability it was found that the predispositions did have an influence at all three stages with the greatest effect at the acceptance stage and the least at the attention stage.

DIFFUSION COMMUNICATION

ANALYSIS

Beal, G. M. & Rogers, E. M. The scientist as a referent in the communication of new technology. *Public Opinion Quarterly*, 1958, 22, 555–563. (III; Innovators, Early adopters, Decision-making process)

As agricultural innovations today are developed by scientists rather than the farmers themselves, their adoption involves communication between these two groups. The authors hypothesize that the success of such communication, as indicated by the individual's rate of adoption of new scientific ideas and practices, may be related to the individual farmer's image or perception of the agricultural scientist as a normative referent. A stratified random sample of 23 Iowa farmers and 104 Ohio farmers were interviewed using projective stimulus pictures. They were first classified into "adopter categories" by their rate of adoption of 24 new farming ideas and a bell-shaped normal distribution curve was obtained for the sample. The projective interviews revealed that, farmers generally viewed the scientist as a "distant referent" and someone with whom they had little direct contact. They perceived their Extension Service and their county agent as their main communication link with agricultural scientists (although a significant number of "innovators" and "early adopters" mentioned skipping the extension agent and going directly to the agricultural college for new information). "Innovators and early adopters are characterized by more interest in agricultural research, more favorable attitudes toward the scientist and a more accurate perception of the agricultural scientist."

PROCESS OF CHANGE

THEORETICAL ANALYSIS

Becker, Howard S. Personal change in adult life. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 255–267. (II; Personal change, Strategies for effecting change, Resistance to change)

The social structure is the chief factor in socialization. It creates the conditions for both change and stability in adult life. Two complementary processes are the mechanisms for change and stability. These are situational adjustment and commitment. In the process of situational adjustment individuals take on the characteristics required by the situations they participate in. This may necessitate behavior change. In the process of commitment a person pursues a consistent line of activity often ignoring the principle of situational adjustment because he has linked previously extraneous and irrelevant lines of action to the action under study. For example, he may turn down a new, higher paying job in order to maintain his friendships. This commitment process promotes stability. The conditions for both situational adjustment and commitment are created by the social structure. A structural explanation of personal change has important implications for attempts to deliberately mold human behavior. It suggests that we need not try to develop deep and lasting interests, be they values or personality traits, in order to produce behavior change. It is enough to create situations which will coerce people into behaving as we want them to and then to create the conditions under which other rewards will become linked to continuing this behavior.

UTILIZING KNOWLEDGE

HISTORICAL

Becker, H. S., & Boskoff, A. *Modern sociological theory in continuity and change.* New York: Holt, Rinehart & Winston, 1957. (I; Gathering knowledge)

This book attempts to trace the lines of development in the science of sociology from the time of World War I to the present. These lines of development are viewed as points of departure for the sociologist. There are old trends that should be revitalized. Some specializations in modern sociology upon which the authors focus are: small groups, social disorganization, social stratification, sociology of law, sociology of religion, and sociology of art, literature, and music. Convergence of sociology with such fields as anthropology, psychology, and psychoanalysis is also studied. Development of sociological research and theory in Britain, France, Germany, Italy and Japan is examined. Sociology is seen as a distinct approach to the study of social life and the understanding of human beings and their problems.

RESEARCH DIFFUSION
EMPIRICAL STUDY

Becker, Marshall H. Factors affecting diffusion of innovations among health professionals. *American Journal of Public Health,* 1970, 60 (2), 294–304. (II, III, IV; Characteristics of innovative persons, Disseminating information, Promotional communication, Local health department innovation)

Health officer communication networks were studied to identify factors influencing adoption of HAP (high adoption potential) and LAP (low adoption potention) innovations. HAP's are innovations requiring no departure from traditional practices. The centrality of a health officer in a communication network was correlated more with HAP than LAP adoptions; presumably marginal persons are freer to adopt LAP innovations. The finding implied that opinion leaders receive an idea from outside the group and help legitimize it, and in fact officers central in communication networks identified their best source of new ideas as out-of-date professional meetings. Slower adopters were influenced more by local sources. Centrality also correlated with factors such as high rank in medical graduating class and political liberality. Normally early adopters wait for marginal persons to take the risks of adopting LAP innovations; centrality may be a result of rather than caused by early adoption of innovations; the desire to maintain or increase prestige motivates professionals in their selection of information sources and adoption times. The authors conclude that opinion leaders should be identified and supported in their exposure to outside conferences, etc., as well as by funds and personnel, and that all members of a communications network be informed of the actions of early adopters as soon as possible.

CHARACTERISTICS OF ORGANIZATIONS AND INNOVATION
EMPIRICAL STUDY

Becker, S. W., & Stafford, F. Some determinants of organizational success. *Journal of Business,* 1967, 40, 511–518. (II, IV; Communication within management, Organizational climate)

The purpose of this article was to investigate the variance in organizational efficiency by considering variables which appeared to be importantly related to efficiency. These variables were organization size, adoption of innovation, psychological distance in the management team, administrative size, and state of the organization's surrounding environment. Conclusions were: (1) initial growth of the organizations was highly related to the growth of the surrounding community (this was negatively correlated with innovation); (2) after this easy growth period (growth in terms of adding surplus to their funds), there was usually an increase in administrative staff, which led to increased innovation; (3) organizations with good communication within the managerial group, and low growth rate of the surrounding community, are about as efficient as those in rapidly growing communities with poor communication; (4) the group with good communication also had a higher rate of efficiency and a significantly higher rate of innovations; (5) good atmosphere generates communication within the managerial group regarding possible business improvements.

ORGANIZATIONAL CHANGE
CASE STUDY ANALYSIS

Beckhard, Richard. An organizational improvement program in a decentralized organization. *Journal of Applied Behavioral Science,* 1966, 2, 3–25. (II; Models for change, Planning for change, Introducing innovation)

The following were set up as goals for an organization improvement program: improved communications among various parts of the organization; change in managerial style from management by control to management by objectives; improved operating efficiency; increased problem-solving skills of the total management; and establishment of a systematic program of growth and development for management executives. These goals were achieved through a series of problem-solving conferences, management seminars and workshops, semiannual goal setting meetings, management team training programs, and task forces set up for the purpose of planning for cuts in overhead cost.

MIDDLEMAN ROLE
CASE STUDY

Beckhard, Richard. Helping a group with planned change: A case study. *Journal of Social Issues,* 1959, 15 (2), 13–19. (IV; Planning for change, Consultation procedure, Improving communication in organizations, Improving working relationships in organizations, Feedback and process of innovation)

Beckhard relates how a year's consultation to a small industrial organization helped change communications and working relations. During his consultation period, the author made the following assumptions: (1) organizational change is a problem in human learning; (2) persons have to learn to behave in new ways before their attitudes and interpersonal relations can change; (3) some of these new ways of behaving may involve better ways of finding out about the other person, of giving and receiving feedback, and of trying out new behavior on the basis of that feedback; and (4) the consultant can help the clients collect and use appropriate and correct information. From this case study the author makes suggestions for effective consulting: (1) the consultant must relate to the several parts of a system before he can solve problems in their mutual relationships; (2) feedback is necessary, both within the client system and between the client system and the consultant; (3) the consultant must give help which is appropriate to the client's needs and readiness to change—he must not confuse his own needs with the client's nor foist upon the organization help for which they see no need; (4) the client should have the freedom to reject the consultant's ideas, his help, or the relationship with the consultant; (5) it is valuable for the consultant to be able to withdraw temporarily, then, after the client system has worked independently, to return and establish a new relation on the basis of that independent action; (6) the relation between client system and consultant changes from dependence to interdependence by moving through the stage of independence.

INNOVATION
ANALYSIS

Ben-David, Joseph. Roles and innovations in medicine. *American Journal of Sociology,* May 1960, 65, 557–568. (II; Linking roles, Problem-solving, Adaptation)

Tracing the development of the fields of bacteriology and psychoanalysis through time, the author applied the proposition "that 'revolutionary' inventions are usually made by outsiders, that is by men who are not engaged in the occupation which is affected by them and are therefore not bound by professional custom and tradition." In the field of medicine two roles were identified: career scientists and medical practitioners. The number of practical problems facing the latter group are within the limitations of their theoretical foundation. Advances by the first group occur in periods when new ideas occur on exploring certain phenomena; however, existing methodology at any point in time defines many problems as being unsolvable. In the long run, practitioners find relevant real problems stemming from personal or professional needs, adapt existing methodology or invent new methodology and thus insure growth and change in the field.

ORGANIZATIONAL AND INSTITUTIONAL CHANGE

ANALYSIS

Benne, Kenneth D. Deliberate changing as the facilitation of growth. In W. G. Bennis, K. D. Benne & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 230–234. (IV; Resistance to change, Norms of growing social systems, Barriers to growth in social systems, Problem-solving in organizations)

The author analyzes the relationship between a change agent and a client system that has solicited help in effecting change and/or solving problems. "Change" for the client system is "growth." Growth is the increased ability of the client to face and solve its problems. A major goal of the change agent is to facilitate the institutionalization of appropriate methodology for adaptation and adjustment, by the client-system. Norms consonant with this adaptation and adjustment or growth are: (1) problem-solving should be experimental; (2) problem-solving should be collaborative; (3) problem-solving should be task- (and reality-) oriented rather than oriented to the maintenance of the prestige of some parts of the system over other parts; (4) problem-solving should be educational and/or therapeutic for individual participants in the change; (5) effective and efficient problem-solving requires channels of communication within the system that make available for public decision and choice, in undistorted form, all relevant data, including data concerning feelings and evaluations (negative and positive) from each and every sub-part of the system. Barriers to growth in social systems are: (1) confusion of the ideological image of the system with the actual behaviors of the system; (2) lack of equality control over the feedback processes which provide information on which controlling decisions are based; (3) suppression of dominant feelings of some or all parts of the system in processes of decision-making; (4) narrow time-perspective within the decision-making processes—a lack of perception of long-range consequences of action as relevant to immediate decision—tends toward a pattern of living from crisis to crisis in the life of the system; (5) inadequate and/or unbalanced role-differentiation in system functioning and in processes of decision-making; (6) inadequate and inaccurate interpretive processes for coding and weighing information received through feedback; (7) inaccurate definition of limits and alternatives in decision-situations; (8) lack of adequate mechanism for mediation and adjustment of conflicts between parts of system and between the system and other systems in the environment.

PLANNING FOR CHANGE

RECOMMENDATIONS

Benne, Kenneth D. Democratic ethics and human engineering. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 141–152. (III, IV; Research-practitioner collaboration)

Guiding principles for incorporating democratic norms into planned change efforts are offered, based on the author's experience. Collaboration between practitioners with divergent interests and between practitioners and researchers is needed to engineer change. Change should be educational; change agents should train clients to be their own change agents. Change must be experimental; plans must be perceived as modifiable if the situation alters. Change efforts should be controlled by the problem confronted, not by personal prestige considerations. Change must be anti-individualistic and yet allow privacy and the development and influence of creative persons.

PLANNING FOR CHANGE
HISTORICAL

Benne, K. D., Bennis, W. G., & Chin, R. Planned change in America. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 28–31. (I; Values and planning)

There are historical and ethical questions involved in planned change. At an earlier time the modal question was "should we seek to plan change?" The controversy was between laissez faire and automatic adjustment ideologies and planning ideologies. A corollary issue was the relationship of social science and practice, that is, whether or not science should intervene. Today the modal question is how to plan particular settings and situations and how to interrelate the various changes. The corollary is the conception of applied social science. Although laissez faire is still raised it is an ideological question. In practice it has been abandoned as evidenced by the numerous helping professions which are, in fact, agents of change. The necessity for planning change is due to cultural conditions, not a particular ideology. A deeper question that must be faced in view of this necessity is whether value and ideological differences can be settled rationally. Concluding philosophical questions raised by the author are: "Is there an irreducible surd of irrationality that dogs all the choices of men? . . . Do 'scientific methods' extend to the evaluation of competing ends of human action or only to the evaluation of alternative means for reaching ends chosen on arbitrary and rationally 'inarbitrable' grounds?"

STRATEGIES FOR EFFECTING CHANGE
MODEL/PRINCIPLES

Benne, K. D., & Birnbaum, M. Principles of changing. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 328–334. (IV; Organizational and institutional change, Process of change, Planning for change, Organizational development)

This paper outlines the method of Lewinian force-field analysis and enumerates certain change principles derived from it. Lewin saw behavior in an institution not as a static habit or pattern, but as a dynamic balance of forces working in opposite directions within the social-psychological space of the institution. *Driving forces* tend to raise the level of production. *Restraining forces* tend to lower it. In change there is an unfreezing of an existing balance or equilibrium, a movement toward new equilibrium, and the refreezing of the new equilibrium. Planned change must use these existing forces. There are three major strategies for achieving change: the driving forces may be increased; the restraining forces may be decreased; these two strategies may be combined. Maintenance of a desirable change must take into account the reaction toward the old pattern that follows change in an organization when pressure for change is relaxed. On the basis of this model of analysis, several principles are formulated: (1) relevant aspects of a subsystem's environment must be changed along with change in the subsystem; (2) in order to change behavior on one level of a hierachical organization, complementary changes must take place on adjacent levels; (3) change should begin at those points in the system where some stress and strain already exist; (4) but change should not begin at the points of greatest stress; (5) thoroughgoing changes should start with the policy-making body; (6) consideration must be given to both the formal and informal organization of an institution; and (7) the more levels of the hierarchy that participate in planning change, the more effective the change will be.

CHANGE AGENTS
THEORY AND PRINCIPLES

Benne, K. D., Chin, R., & Bennis, W. G. Science and practice. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change* (2d ed.) New York: Holt, Rinehart & Winston, 1969 Pp. 113–123. (I; Role of change agents, Utilizing knowledge, Selecting knowledge)

The change agent is required to use both science and art in carrying out his role. The assumption to date has been that there is a logical gulf between these two aspects of the role. In denying this gulf several issues are discussed: (1) *Science versus art in practice.* Analogies are drawn between technological engineering and human engineering in the use of scientific knowledge to exploit new possibilities. Sensitivity to important moral and esthetic values is advocated to inhibit possible dehumanizing effects of engineering practice. (2) *Generalizations and cases.* Scientific generalizations can be integrated into diagnostic orientations which are often themselves based on implicit generalizations. (3) *Concepts versus feelings in practice.* Cognitive processes and feelings have been dichotomized due to the process of abstraction and the need for the creation of terms and concepts. These must be put back together. The change agent must learn to use his own feelings and emotional apparatus together with his conceptual paraphernalia. (4) *Selection of conceptual tools.* This must be multidisciplinary in order to deal with a variety of levels of analysis, each of which may illuminate a different aspect of the problem. (5) *Pitfalls await the unwary.* Problems involving scientific usage in practice are described and discussed.

USE OF GROUPS FOR CHANGE
EXPERIMENTAL STUDY

Bennett, E. Discussion, decision, commitment and consensus in "group decision." *Human Relations,* 1955, 8, 251–273. (II, IV; Group climate for change, Opinions and attitudes in change)

This experiment tested the contribution of four variables on the effects of "group decision," here defined as decisions made about individual goals arrived at in a group setting. The variables were group discussion, making a decision, making a public commitment after arriving at a decision, and group consensus. Group discussion was not found to have a greater influence on action than a lecture. Making a decision about taking action raised the probability that such action would be taken. A public commitment about a decision did not increase the probability that action would be taken. A group consensus, either actual or perceived, regarding a decision to act raised the probability that individuals within the group would act. Other factors which may be important in group decision are leadership technique, the specific subject matter, and group cohesiveness.

KNOWLEDGE AND PLANNED ORGANIZATIONAL CHANGE
THEORY AND PRINCIPLES

Bennis, Warren G. Theory and method in applying behavioral science to planned organizational change. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 62–78. (IV; Models for change; Change agents; Strategies for effecting change; Planning for change; Research for change; Organizational climate for change)

This paper is concerned with the strategic, methodological and conceptual issues brought about by the emergence of the action role of the behavioral scientist. The prerequisites for a viable theory of changing and the criteria for a viable applied behavioral science research are given. Eight types of change programs are identified with their intrinsic biases or flaws. The elements of planned organizational change are: interpersonal competence of managers; legitimation of values concerning human factors and feelings; reduction of inter- and intragroup tension by increased understanding; development of team management; conflict resolution through training or problem-solving; developing a view of the organization as an organic system marked by mutual trust, interdependence, multigroup membership and shared responsibility. Programs for implementing organizational change include training, consulting and applied research. Strategic models for this kind of change are presented. Other areas of concern are the power and role of the change agent, the characteristics of the client system and the measurement of outcomes. We know least about the process of implementation which has the following necessary elements: client understanding, control and trust; self-motivated change effort through legitimation and reinforcement of the change by top levels of the organization; inclusion of emotional and value elements as well as cognitive elements in the change program; and the change agent-client relationship.

PROCESS OF CHANGE
SYNTHESIS

Bennis, W. G., Benne, K. D. & Chin, R. (Eds.) *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. (II, I, III; Planning for change, Models in change)

Planned change is defined as conscious effort to improve a system through the use of scientific knowledge. The authors summarize how change occurs, emphasizing the role of the change agent with respect to clients and other change agents. The development of directed social change is traced, and the need for a valid framework for an applied social science and specific criteria for the framework are discussed. Client-systems must build their own change agent structures to stay adaptable. Models of stable, changing, and conflicting social systems are presented with respect to leverage points that can be used to plan change campaigns. Small groups in a system can be the major change tool. The *role* of a change agent relates to his concepts of self and change and is the major bridge for interrelating ideas. Motivation, communication, and power are considerations for change agents' decisions. The *dynamics* of influence are discussed, since influence must precede change. The degree to which an institution limits outside social intercourse and the amount of cognitive clarity it provides to individual's relationships with the organization are factors in the influence process. The three important institutional variables are the degrees to which the institution is total, the institutional-individual relationship is voluntary, and the institution's main goal is indoctrination or change. A proposed paradigm for examining influence goals is: cognitive, affective, and motoric dimensions on one axis and methodological and content categories on the other. Influence may be internalized, conscious, or neither; it may be adopted from fear or reality considerations. Four dialectics considered by the authors are: between cognition and experience, necessity and desirability, self and other, and knowledge and action, with the last the most relevant to research utilization. Response to influence is usually either conformity or revolution. Technologies of change programs have three pivotal functions: training, consulting, and applied research. A training program must provide a (possibly isolated) learning opportunity and still have learning feedback into the organization. A consultant helps change a system by focusing on the client's problem, not on the client. Applied researchers must consider several relationships: that of their application and the scientific method, that of themselves and their subjects, and that of the organization and subjects turned clients.

PLANNING FOR CHANGE
SYNTHESIS/MODELS

Bennis, W. G., & Schein, E. H. Principles and strategies in the use of laboratory training for improving social systems. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 335–357. (IV; Change agent, Organizational change)

Training labs can help organizations meet the tasks of adaptation and collaboration. The suitability of a lab to aid a given organization should be considered in terms of the congruence of the lab's learning goals with those of the organization and congruence of values (including legitimacy of interpersonal relationships, degree of rigidity of authority, amount of conflict, nature of subsystem boundaries, and expectations about the role of the change agent). Models of change agent are explored: *external agents* can be objective and have no conflicting duties, *internal ones* are acquainted with and familiar to the system; *power sources* combine expert power and line or status power; the most common model is of the external change agent employing expert power. The *change agent's role* has these characteristics: he is a *professional* acting in the client's interests; he has *no formal membership* in the organization and his colleague support may not be present; his role is *ambiguous* and may be viewed with suspicion; he may be considered *expendable;* and his role has *potential risk* both to the client and to his professional status. His competence should encompass broad conceptual knowledge, theories and methods of organizational change, sources of help, and orientation to the ethical and evaluative functions of his role. His skills must match his knowledge. Implementation strategies for lab training should consider that "the client" is different through the course of training (various individuals and groups at various times), it is often less risky to start change at lower levels, interdependencies of client subsystems are important, and the change agent should involve the client in establishing goals and planning change.

MODEL FOR CHANGE
DESCRIPTION

Berlin, Irving N. Learning mental health consultation history and problems. *Mental Hygiene,* 1964, 48 (2), 257–266. (IV; Change process, Promotion of utilization, Educational innovation)

The teaching and learning of mental health consultation is rapidly becoming one of the most vital areas in community and preventive psychiatry. Mental health consultation, as differentiated from consultation to agencies of an educative or technical advisory nature, was first described by Coleman in 1947. Since then, many others, particularly Caplan, have enunciated the principles and practice of this process. It is an indirect method of focusing on the work problems of an agency worker to help him with the internalized conflicts which produce the problems. In recent years both formal and informal teaching of this method have occurred. Mental health professionals need to unlearn some of their generic methods to learn this indirect method, in which their satisfactions are usually delayed. The initial contract is often ignored, introductory phases are often replete with disappointments as consultees complain they are not helped. Consultant-anxiety is an expected part of the process because of the many and varied implicit and explicit demands of the consultee. Administrators may be particularly difficult to engage in consultation because they may see it as a threat to their facade of adequacy. Problems of teaching center around helping the trainee to live through the inevitable frustrations as he learns a new technique.

RESISTANCE TO CHANGE
ANALYSIS AND SUGGESTIONS

Berlin, Irving N. Resistance to change in mental health professionals. *American Journal of Orthopsychiatry*, 1969, 39, 109–115. (IV; Strategies for change, Factors inhibiting change in mental health practice, Overcoming resistance to innovation, Mental health professionals)

Berlin discusses some of the major factors inhibiting change in mental health practice: (1) the proficiency and comfort of previously learned theory and practice provide personal satisfactions, which are likely to decrease with the introduction of new theories and techniques; (2) the money and status accorded a mental health professional who uses tried and true techniques is endangered if he champions new techniques; (3) the unknown factors behind most innovations produce an uncertainty about use which most mental health professionals would rather forego than face; (4) changes can often result in an alteration of status which is threatening. Three suggestions offered for overcoming resistance to innovation in mental health professionals are: (1) community involvement may force the professional to reexamine his methods and techniques; (2) pilot programs give a somewhat anxiety-free situation to experiment with and practice new techniques, as well as helping to develop a theoretical understanding of new ideas; (3) group discussions may provide necessary support for actual experimentation.

COMMUNICATION
THEORETICAL ANALYSIS

Berlyne, D. E. Uncertainty and conflict: A point of contact between information theory and behavior-theory concepts. *Psychological Review*, 1957, 64, 329–339. (III, IV; Opinions and attitudes in change, Characteristics of persons in change)

The use of information-theory measures is possible whenever there is a partition and a probability distribution. The stimuli and responses of behavior theory fulfill these conditions, but the situations in which information-theory language has proved useful to psychology have been ones in which conflict is an important factor. The "uncertainty" function satisfies some of the requirements that may reasonably be laid down for a measure of "degree of conflict." But it does not satisfy them all without some modification, because it depends on the relative but not the absolute strengths of competing response tendencies. A discussion of six psychological variables that appear to depend on degree of conflict reveals several further links with information theory. The variables are emotional disturbance, reaction time, drive, curiosity, stimulus complexity, and reward.

DIFFUSION OF INNOVATION
THEORETICAL ANALYSIS

Bhola, Harbans S. *A configurational theory of innovation diffusion*. Columbus, Ohio: Bureau of Educational Research, College of Education, Ohio State University, 1965. (III; Models for change, Processes of innovation)

The author presents a mathematical and conceptual model of innovation diffusion in order to predict success or failure of specific projects. (1) Diffusion is described as a function $f: D = f(C_{ij}LER)$ where C_{ij} is the configurational relationship between the initiator (i) and the target (j), L is the extent and nature of linkage between and within configurations (linkage = communication), E is the environment of the configuration, and R is the resources of both the initiator and target configurations. (2) Configurations are social units of people with various formal and informal roles. (3) A model for social change includes six stages, based on Guba and Clark's Theory into Action model. The objective, evaluative criteria, and relation to change are given for each stage. (4) The environment (E) can be supportive, neutral, or inhibiting; supportive and inhibiting environments can be either weak or powerful. (5) The necessary resources (R) include material resources, conceptual skills, personnel, and influence. (6) The initiator and target configurations in C_{ij} may need an articulating or adapting force to overlap or bridge the gap between the initiator and the target.

DISSEMINATING/DIFFUSING OF INFORMATION/KNOWLEDGE

SEMINAR REPORT

Bigaman, Ronald. Scientist and scientific literature: A symposium. *American Documentation*, April 1963, 14, 161–162. (I; Information storage, Information retrieval)

Complaints voiced by scientists as to information problems at the symposium were: the information explosion has also brought a lot of trivia; much research today is irrelevant or repetitive with too much pressure to publish often the cause; the volume of material confronting scientists is frustrating; the person doing the abstract of an article (author or stranger) determines differing emphasis on words and phrases; new fields of knowledge require new forms of classifying information in those fields; information storage and retrieval systems too often are designed to cover the material in the system and not the needs of the system's user.

STRATEGIES FOR EFFECTING ORGANIZATIONAL CHANGE

MODEL

Blake, R. R., Mouton, J. S., & Sloma, R. L. The union-management intergroup laboratory: Strategy for resolving intergroup conflict. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 176–191. (IV; Change agent, Middleman role, Organizational climate, Use of groups for change)

Labor-management conflicts and cleavages in a win-lose context may be converted into a problem-solving approach on both sides by the efforts of a change agent team. A strategy is presented for conflict management which combines the application of basic research findings and of a technology of face-to-face confrontation, in open conflict, of the images each party holds of the other and of himself. The role of the change agent in conducting such a program and the theory of changing implied in it are presented in detail. Based on behavioral science concepts, an educational laboratory was held. There were eight phases including orientation of participants to the laboratory; intergroup development of self-image and counter image; exchange of images by management and union; clarification of image; intragroup diagnosis with self-insight and understanding; consolidation of key issues; and planning for the next steps. The greatest impact will become evident when new issues and different problems arise in the relationship. Correcting a situation of long-term, chronic hostility requires continuous and diligent followup efforts. As much as a 5-year span may be needed before the root system that produced the original animosities can be replaced by a new and healthier root system.

RESPONSE TO INNOVATION

CASE STUDY

Blalock, T. C. *State legislators' perception of the North Carolina cooperative agricultural extension service.* (Doctoral dissertation, University of Wisconsin) Ann Arbor, Mich.: University Microfilms, 1963. No. 63–5734. (II; Linking institutions, Evaluation of innovation, Response to innovation)

The principle objectives of this study were to describe and analyze legislators' perception of Extension Service and to examine the relationship between the components of perception and the degree of knowledge of Extension Service, the degree of approval of its programs and the opinion of its scope. Findings include the following: Degree of knowledge, degree of approval and opinion of scope all had "some significant influence on the legislators' overall perception of Extension Service." Over 50 percent of the respondents made a direct reference to Extension's educational responsibilities. However, the activity of providing information to farmers, as a means of assisting them in solving immediate problems, was perceived to be the most important activity among a list of nine considered. Respondents' understanding of Extension organization and financing was low. Agreement was low between the legislators' perception of the importance of various program areas and the relative amount of time and effort that has been devoted to these areas by the county Extension staffs. The legislators generally had a high regard for the training and ability of Extension's staff.

COMMUNICATION RESEARCH
EXPERIMENTAL STUDY

Block, J., & Bennett, L. Assessment of communication: Perception and transmission as a function of the social situation. *Human Relations,* 1955, 8 (3), 317–325. (I; Communication perception, Communication transmission, Communication and social situation)

This experiment studied the interactions of a single subject (a female, clinical psychologist) with 23 significant other people. The procedure was made up of Q-sorts of 100 statements that could characterize a two-person interaction; the subject did two Q-sorts for each relationship, one describing her behavior and one describing that of the significant other. Twenty-one of the significant others also did two Q-sorts each, describing their interaction with the subject. A factor analysis was then done. Four factors resulted; they describe four relational situations: the friendship factor, the professional status factor, the intimacy factor and the therapy-patient factor. Each factor represents a bundle of characteristics which describe the subject in a certain role situation. It was found that the roles manifested by the subject varied as a function of the people with whom she was interacting and as a function of the interactional context. Thus, "behavior cannot be predicted by studies of personality structure *in vacuo.*" Two kinds of distortion arise in interaction as indicated by the lack of agreement between descriptions of interactions by the two participants; these are "distortion at the perceptual or decoding level" and "distortion at the transmission or encoding level."

PROMOTION OF UTILIZATION
SUGGESTIONS

Bloomer, H. H. Informational gaps in the area of clinical services. *American Speech and Hearing Association,* September 1968, 10, 371–374. (I, III; Diffusing information, Research dissemination, Research-practitioner gap)

The author explores the *information gap between audiologists, dentists and speech pathologists.* He cites reasons for the gap: lack of information about the relationship between oral formation and speech defects, and failure to communicate known findings. He suggests closing gaps through clinical studies relating the fields, obtaining objective criteria to judge effectiveness of treatment programs, overcoming the language barrier among the three disciplines, and learning to judge when cooperative treatment of an orofacial patient should begin. Educational programs in the three areas should stress a multidisciplinary approach.

STRATEGIES FOR EFFECTING CHANGE
EXPERIMENTAL STUDY

Blum, R. H., & Downing, J. J. Staff response to innovation in a mental health service. *American Journal of Public Health,* 1964, 54, 1230–1240. (IV; Organizational change, Diffusion of innovation, Use of groups for change, Mental health innovations)

Professional response to mental health innovations is extensively analyzed, including a study of the introduction of and responses to three innovations designed to improve patient care and make better use of staff time. Each innovation was introduced differently and with varying degrees of central control and coercion. A new alcoholism treatment unit with new staff was created, a new team was integrated into the child guidance clinic under the control of the chief of service, and a new team in the adult unit was formed from outside personnel and introduced with no approval or support from the chief of service. Response of professionals was measured by records of complaints and activities and by two questionnaires, one immediately and one a year after implementation. Staff terminations, complaints, and administrative problems were greatest in the adult unit, and there was the longest lag between staffing and services. Immediate response to this unit was the most hostile and suspicious; a year later it was fairly well accepted. Disruption of local control and prestige and informal relationships can cause negative responses. The adult unit was most successful in achieving its goals, partly due to help by outside experts. The adult and child guidance teams elected to dissolve after a year due to peer pressure and lack of tolerance for autonomy. The adult team, reabsorbed into its parent group, had a large impact, due to its original drastic departures from traditional procedures. The author concludes that resistance does not necessarily interfere with the improvement caused by a desirable change.

STRATEGIES FOR EFFECTING CHANGE
SUGGESTIONS

Bobbe, R. A., & Schaffer, R. H. Mastering change: Breakthrough projects and beyond. *American Management Association Bulletin,* 1968. (IV; Planning for change, Organizational and institutional change, Strategies for overcoming resistance to change)

Characteristic responses to change are often inadequate. Suggestions for smooth accomplishment of change are given. Inadequate responses are: concentration on preparation for change on one aspect of change; delegation of planning and carrying out change to consultants or staff; deferring action; or "major surgery." An adequate response requires a gradual expansion of management's capacity for carrying out change. The strategy for accomplishing this expansion should include these elements: developing achievable breakthrough projects which respond to immediate needs and are tangible steps to key long-range goals; giving written assignments to state objectives, define the project and its resources and methods, and state evaluative criteria; requiring written work plans which detail an individual's or group's steps in carrying out the change; instituting innovative action, perhaps by experimenting in an extra-work setting; providing methods for periodically reviewing work and controlling future work; instituting steps to create an expanding sustaining process to reshape the change project as it progresses if necessary and to support the change after it has occurred. The author cites a case where a project faltered and was revived by replacing original goals with far tougher, more ambitious goals.

COMMUNICATION
CASE STUDY

Bogart, L. Measuring the effectiveness of an overseas information campaign. *Public Opinion Quarterly,* Winter 1957–1958, 21, 475–498. (I; Attitudinal change, Opinion change, Propaganda effectiveness)

This article describes a case study in which an attempt was made to determine propaganda effects in Greece. The United States Information Service placed ads in Greek newspapers and published and distributed a booklet, about the Universal Declaration of Human Rights, describing how the U.S. and Greece are joined together in the cause of these rights and freedoms. Surveys showed that the booklets and ads had received large exposure. A sample population was questioned afterward as to their reactions. On the whole, they were received favorably. Most, while approving of the U.S.'s promotion of freedom, did not associate the ads with propaganda. Instead, they were seen as good because they were a means of telling the people about their rights. Attitudes showed little or no change as a result of the campaign. Attitudes were reinforced in most cases, particularly among those favorable at the outset. The campaign was especially effective in that it gave people reasons for believing that the U.S. desired Greece to remain free and independent. It also enabled more people to believe that America was a country devoted to human rights and freedoms. While this is not attitude change, it is a supporting argument to confirm already favorable but previously unexpressable opinion, and as such can be seen as a step toward attitude change. To effect such changes, many small doses of propaganda must be delivered over an extended time period. Massive one-step campaigns have been shown to rarely cause lasting attitude changes.

USE OF GROUPS FOR CHANGE
CASE STUDY/SUGGESTIONS

Borman, Leonard D. The marginal route of a mental hospital innovation. Paper presented at the Annual Meeting of the Society for Applied Anthropology, Lexington, Ky., April 1965. (IV, II; Strategies for effecting change, Diffusion and adoption of innovation, Mental hospital innovation)

Marginal members of a population may sometimes be more effective at introducing an innovation than more influential and socially acceptable individuals. This report is a case study of the introduction to a mental hospital of a new kind of patient council which involved socially marginal professionals and backward, chronic patients. The use of "discarded" patients for the innovation posed little threat to hospital practices, and the councils appeared to resemble play activities so the innovation was ignored by "prestigeful" professionals. Four processes led to wider use and acceptance: recreation specialists throughout the hospital were prodded by the chief of the recreation department to establish councils, research interest stimulated by the councils led to further acceptance, there was a felt need for improving existing care and treatment arrangements, and the patient council innovation became identified with the outside therapeutic community movement via distribution of literature on the movement and consulting visits and lectures by professionals in the movement. Borman stresses the importance of researchers with rather undefined roles of communicating the innovation to all levels of the hospital.

ADOPTION OF INNOVATION
ANALYSIS AND SUGGESTIONS

Bose, S. P., & Pasgukta, S. *The adoption process.* Calcutta: Socio-Agro-Economic Research Organization, West Bengal Department of Agriculture. Extension Bulletin 1, 1962. (III; Strategy for effecting change, Planning for change, Social factors in change, Characteristics of early adopters)

This is a pamphlet aimed at giving the extension worker an understanding of social factors when he presents a new farm practice to the farmers for adoption. It discusses in simple language (1) the strategy of change; (2) variation in adoption; and (3) application of the knowledge of differential adoption by the extension workers in the field. Recommendations to change the behavior of farmers include: (1) selecting villages for concentrated effort on the basis of the availability of characteristics prone to rapid adoption of new practice; (2) locating potential adopters on the basis of knowledge of the adopter's characteristics; (3) working directly with early adopters; (4) establishing extension worker's presence in the village; (5) choosing those practices most apt to yield early and quick progress.

ADOPTION OF INNOVATION
CASE STUDY

Bose, S. P., & Basu, S. K. Influence of reference groups on adoption behavior of farmers. *Bulletin of the Cultural Research Institute,* 1963, 2 (1), 62–65. (I; Adoption behavior, Adoption rate, Reference group norms)

The total farming population of the village of Bodia in India (233 families of 393 households) was interviewed to test the hypothesis: that in a village a farmer's adoption of recommended farm practices is influenced by the adoption rate of his friends, relatives and work exchange groups. The data reflects a significant similarity to the study conducted by Marsh and Coleman (Rural Sociology, 1954) in Kentucky, an entirely different culture. Those farmers who adopted a higher rate of practices had friends, relatives and work exchange groups who also adopted a high rate of practices, and those who adopted a lesser number of practices had friends, relatives and work exchange groups who adopted a lesser rate of practices. The conclusion is made that a farmer tends to conform to the norms of his reference group in his adoption behavior.

CLASSIFYING KNOWLEDGE
EXHORTATION

Boskoff, Alvin. Social change. In H. Becker & A. Boskoff (Eds.), *Modern sociological theory in continuity and change.* New York: Holt, Rinehart & Winston, 1957. (I; Process of change)

The study of social change has its roots in the history of sociology, but after World War I it received little serious attention. Because of this part-time interest, research into social change tends to be fragmented. This paper presents an analysis and tentative schema of the work done in the area of social change. One of the major dilemmas of sociologists in the study of change has been their traditional idea of order *versus* change. This problem may be overcome in the new approach of seeing data in terms of dynamic systems where order and change are intersecting and overlapping. There is much research data today in the field of social change, but this had not led, as of yet, to the generation of sound, organized theories.

CHANGE AGENTS
CASE STUDY ANALYSIS

Bowman, Paul H. The role of the consultant as a motivator of action. *Mental Hygiene*, 1959, 43, 105–110. (III, IV; Strategies for effecting change, Middleman role)

Motivational methods used by consultants to a 10-year community research project are discussed. Consultants serve two basic functions: the *knowledge function*, analyzing a problem and applying useful resources to solve it; and the *motivation function*, helping people define problems, mobilize resources, and carry out action programs. External motivational methods include the *authority method* based on the consultant's status in the community power structure and support from influential individuals, the *emotional contagion* method useful to enthusiastic, highly involved individuals, and *reward and punishment methods*. Rewards can be recognition of accomplishments, invitations to speak at universities, or co-authorship of forthcoming articles. Rewards may become more important than project goals, however. *Internal motivations* can be tapped, primarily to help individuals assess their own needs, problems, and possible solutions.

BARRIERS TO UTILIZATION
EXHORTATION

Boyan, Norman, J. Problems and issues of knowledge production and utilization in educational administration. In T. L. Eidell & J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration*. Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968. (I, III; Research-practitioner gap, Educational change)

The products of research have three common features: an undeveloped state, forms not understood or acceptable to users, no specific provision for training the users. The process of development should be the link between research and practice. The state of educational development is low due to the lack of understanding of its importance on the part of educators. Where serious and extensive developmental programs have been carried out they have improved the production and utilization of new knowledge. There is a need for improved inquiry and developmental programs on the level of educational administration. In order to aid these programs there may be a need to reduce the number of institutions that prepare educational administrators. There is need for developmental work to be done in the areas of curriculums for the preparation of administrators, structural changes in the educational system that would alter the way they carry out their tasks, and procedures of educational administration.

OPINIONS AND ATTITUDES IN CHANGE
ANALYSIS/SUGGESTIONS

Brayfield, A. H. Human effectiveness. *American Psychologist*, 1965, 20 (8), 645–651. (II; Strategies for effecting change, Change agents for behavioral change)

All institutions and professions serving those institutions exist because they meet certain human needs. Psychology meets such needs in the areas of mental health, general research, and social work. Thus, psychology serves the purpose of maintaining "human effectiveness" —the continuing performance of members of society in their proper roles, tasks and relationships. In addition, psychology could offer a classification scheme describing common task requirements an individual could use to function effectively in a complex society. With the psychologist's assistance a patient could make up his own task description for: (a) the clarification of his personal goals and (b) a planned program for his personal development. Studies have proved that humans need to maintain a relationship of effectiveness between themselves and their environment and that social effectiveness is directly related to the incidence of mental disorders. Such disorders in human behavior are merely inappropriate solutions to the problems of living at various stages of development. While psychology is becoming more important in education, there seems to be little likelihood that there will be any development of a social institution revolving around human effectiveness. However, human effectiveness can and should be dealt with in health institutions, since some health problems are now seen as a direct result of poverty, juvenile delinquency, and the like.

EDUCATIONAL INNOVATION
ANALYSIS/FIELD STUDY

Brickell, Henry M. The dynamics of educational change. *Theory into Practice,* 1962, 1 (2), 81–88. (II, IV; Organizational factors involving innovation, Process of change, Change agents, Organizational and institutional change, Resistance to change, Adoption of innovation)

The author studied programs requiring significant shifts in normal institutional arrangements to ascertain what causes educational change. He found varying degrees of influence among different groups. The *public and school boards* demand results—not specific innovations, and thus have little power to effect educational innovation *Administrators* are the main change agents since teachers rarely suggest changes. The administrator may not be the original source but unless he promotes the innovation, it will not come into being. *Teachers* can effect only three types of change: (1) change in instructional procedure, (2) relocation of existing curriculum content, and (3) introduction of single special courses at the high school level. Although teachers may feel apathy or opposition to a change at first, they usually will prefer a new program within 4 months to a year, once they feel secure and competent. The role of outside organizations attempting to introduce innovations is also discussed. The *New York State Education Department* encourages adoption of innovations that it officially endorses and discourages adoption of others. *Colleges and universities* have little influence on innovation in elementary and secondary schools. *Professional associations* are very effective communicators but their communications are often random and unfocused. *College-affiliated school-study councils* are usually poorly financed and weak in influence. *Private philanthropic foundations* have produced promising programs but often arouse professional suspicions. *Commercial organizations* (i.e., textbook publishers) are extremely powerful. But, once an innovation is accepted, they inhibit change since they want repeated sales of the same product. Three phases of instructional innovation are delineated. In the first phase, *design,* the ideal conditions are when circumstances are artificial, enriched and free. In the second phase, *evaluation,* the ideal circumstances are controlled, closely observed and unfree. In the third phase, *dissemination,* the ideal circumstances are ordinary, unenriched and normal. Education, unlike other disciplines, does not distinguish among these three phases of change and thus blocks improvement. The three phases cannot be performed in one setting but campus laboratory schools are the common places from which educational innovations arise.

EDUCATIONAL INNOVATION
COMMISSION STUDY

Brickell, Henry M. *Organizing New York State for educational change.* Albany, N.Y.: State Department of Education, 1961. (II, I; Planning for change, Rejection of innovation, Introducing innovation, Evaluation of innovation, Educational dissemination)

A study was undertaken of educational experimentation in the State of New York. Visits were made to schools, colleges, the State Education Department, professional associations, private agencies, and commercial organizations. The main conclusion of the study was that design, evaluation, and dissemination of innovations are three distinctly different processes. The ideal condition for design is freedom, for evaluation is control, and for dissemination is normalcy. It was recommended that a semiautonomous research agency be established to set up Statewide enrichment field centers for design, which would be staffed by school and college personnel. Innovations would then be tested Statewide. Dissemination should be handled by regional units established for that purpose.

RESISTANCE TO CHANGE

CASE STUDY ANALYSIS/SUGGESTIONS

Brickell, Henry M. State organization for educational change: A case study and a proposal. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 493–531. (I, IV; Educational innovation, Process of innovation, Institutional change)

In the 15 months following Sputnik I, a study showed that the rate of innovations in New York public school systems doubled, but most schools as structured institutions remained unchanged. The author discusses a second study to discover the reasons for the stability, identify forces that could loosen it, and suggest a pattern of State organization to facilitate rational changes in instructional arrangements. The study consisted of many, many unstructured interviews in school systems in and out of New York State, colleges, study councils, and many other organizations. The most formidable block to instructional change (i.e., the initiation of team teaching, ungraded classes, use of television, etc.) was the combination of friction among fund managers and initiators of change, and the misunderstanding that the three processes of design, evaluation, and dissemination of innovations can be carried out under a single "best" set of circumstances. Design calls for an ivory-tower situation with intelligent people, a limited problem, and adequate time and resources. Evaluators need to control or at least assess forces influencing the success of an innovation. Dissemination is broadest in an "everyday" situation involving demonstration and persuasion. Medicine, agriculture, and industry realize the distinctions between design, evaluation, and dissemination better than does education. Educational change is determined by and between two groups: the "external" public and board of education, and the "internal" administrators and teachers. Administrative initiative changes educational structures. Teachers can only make limited changes involving classroom practices, relocation of curriculum content, and introduction of high school courses. Most educational changes are adaptations from neighboring systems, aided by visits to see the innovation in action and overcome suspicion. More help to a teacher who is starting to provide new instruction = a more successful innovation. Universities have little influence on educational innovation other than by training teachers. Textbook publishers and other commercial organizations are much more influential, although once a "product" begins to sell, they inhibit further changes. A new State plan of organization was proposed, utilizing existing funds and people, and guiding change influences rather than opposing them. The plan recognizes the design/evaluation/dissemination distinctions and uses generalists for long-range posts and specialists for temporary ones. The plan was dissatisfying to many organizations within a year of its presentation, but it was seen as meriting very serious study, and the Commissioner of Education announced the implementation of recommendations concerning design and evaluation research units.

USE OF GROUPS FOR CHANGE
EXPERIMENTAL STUDY

Brickley, F. M. Use of the analytic group discussion method with teachers. In M. Krugman (Ed.), *Orthopsychiatry and the school.* New York: American Orthopsychiatric Association, 1958, Pp. 213–221. (II, IV; Strategies for effecting change, Process of change, Educational innovation, Opinions and attitudes concerning change)

The study was contrived as an evaluation of the effectiveness of modified short term analytically oriented *group therapy* for teachers' improved job functioning. A pilot study was first made, followed by formation of a small group of teachers and a control group, established for fifteen weeks; afterward an objective evaluation was attempted. Significant findings include :(1) a modified form of group therapy may be used successfully with normal professional groups. (2) The group discussion method may be a valuable tool in improving work satisfaction and achievement, particularly in activities involving "working with" others. (3) a group can be conducted successfully under a trained clinical counselor, who also has some background in education as well as experience as a member of groups of this type, (i.e., he need not be a psychiatrist). (4) This method could be used with groups which were not psychologically sophisticated. (b) Groups conducted in a permissive manner may lead the group members to more constructive relationships with authority figures, and may lead to the exercise of authority more democratically themselves. (6) The method has usefulness in in-service teacher training and pre-service teacher training. (7) Experience in leading a pilot group, which contained several relatively neurotic group members, plus the favorable outcomes for the experimental group (where an attempt was made to screen out the obviously neurotic) seem to suggest the conclusion that perhaps the group discussion method is better adapted to groups which exclude the more neurotic teachers.

RESISTANCE TO CHANGE
CASE STUDIES
RECOMMENDATIONS

Bright, James R. *Research, development, and technological innovation: An introduction.* Homewood, Ill.: Richard D. Irwin, 1964. (I, IV; Introducing technological innovation)

Case studies and examples of the principles of change via technological innovations are discussed. The chapter most relevant to mental health, "Resistance to Technological Innovation," is abstracted here. Major reasons for resistance to change are: protection of social status or an existing way of life and/or prevention of elimination of a job or reduction in livelihood from devaluation of presently required skills. The innovation may conflict with or disturb the equilibrium of existing laws or rules; psychological considerations of personality, fear, etc.; society or work atmosphere; social customs, fashions, taste, or habits; or the conformity imposed by organized groups. Organizations oppose change to prevent devaluation of currently invested capital, to avoid new expenditures, or from inherent rigidity. A resistance study should identify sources of resistance and then consider means of minimizing them. The author recommends that the threat implied by an innovation be minimized, possibly by introducing the innovation in stages, and that innovations should be made where people are accustomed to frequent changes.

DISSEMINATING INFORMATION
EXHORTATION

Brosin, H. W. Information explosion—information retrieval. *American Journal of Psychiatry,* 1965, 22, 453–454. (III, I; Research dissemination, Selecting information)

Because of the overwhelming number of professional journals in psychiatry and related fields, a number of aids have been developed such as *Index Medlars*; but studies show that they are not widely used by most clinicians or investigators. To solve the problems of duplication and wasted man-hours, many task forces have been set up to study the system of communication in the biomedical and behavioral sciences. The expressed and unrecognized needs of the user should be determined before an efficient communication network can be developed.

PLANNING FOR CHANGE
THEORETICAL ANALYSIS

Broudy, Harry S. Criteria for the theoretical adequacy of conceptual framework of planned educational change. Paper presented to the Conference on Strategies for Educational Change, Washington, D.C., November 1965. *Summarized in SEC Newsletter: Strategies for Educational Change*, 1965, 1 (4), 3. (IV, III, I; Process of change, Ethical positions concerning change, Opinions and attitudes concerning change)

The paper addresses the question of what criteria of logical adequacy should be fulfilled by a theory of planned change. Value positions and moral norms are considered indirectly. Problems of and criteria for assessing generalizibility, explanation, prediction, and control in social sciences are seen as being somewhat different from those in the physical sciences. The problems of adequacy are discussed along two general dimensions: (1) structure of knowledge or questions about the logical relationship of new generalizations with already available generalizations; and (2) methodology employed for arriving at those new facts or generalizations. It is difficult for social science to approximate the ideal conditions for tested knowledge because there is no agreed upon set of established facts, or for that matter, no set of established problems to help both in theory building and fact gathering. This makes it difficult to keep studies comparable, to disconfirm weak hypotheses, and to make research results cumulative rather than merely accumulating. The paper summarizes criteria for judging theoretical adequacy related to definition, logical and psychological explanation, methodological consequences, and heuristic value of formulations.

ORGANIZATIONAL DEVELOPMENT
ANALYSIS/RECOMMENDATIONS

Brown, Francis C. The impact of government research on business firms. *Research Management*, 1962, 5, 339–359. (I, IV; Industrial innovation, Planning for change, Selecting information/knowledge)

The author, president of a company which holds no government supported research contracts, discusses the *effects of governmental funding* of one-half to two-thirds of all United States R. & D. He points out that as government pays more, industry's control of its own labs weakens, salaries of scientists and engineers escalate, and large expenditures are made on equipment, all with no evidence that increased expenditure is matched by research productivity. He fears that socialized medicine will be a by-product of governmental funding of medical research. The author disputes the government's position that publicly funded patents should not enrich private enterprise, and he states that this policy is no incentive to researchers. Money is wasted sometimes by extravagance or by duplication of effort. And promising new ideas cannot be explored since the government wants specific answers to specific problems. The author concludes that the economy needs to have "the profitability of the products of research . . . reflected in the increased corporate profits."

DIFFUSION OF INNOVATION

THEORETICAL ANALYSIS

Brown, Lawrence A. *Diffusion dynamics: A Review and revision of the quantitative theory of the spatial diffusion of innovation.* (Doctoral dissertation, Northwestern University) Ann Arbor, Mich.: University Microfilms, 1966. No. 66–13,958. (II, III; Adoption of innovation, Response to innovation, Spatial factors involving innovation)

This investigation considers the adequacy of existing diffusion of innovation theory as it applies to diffusion among localities or single communities. In particular, focus is upon the quantitative expressions of the theory as employed by geographers. The analysis is restricted to innovations which are adopted by a single individual or by some larger unit which may be seen to act as a single individual, e.g., a household. Heretofore, geographic research on the diffusion of innovation has viewed adoption solely as the outcome of a process of learning or persuasion, which is in accord with the research of other social sciences. However, in explicitly considering diffusion on a landscape of central places, the gaining of information is seen to be not a necessary and sufficient condition. Acquisition of the innovation itself must also be considered since the spatial pattern of the availability of the *innovation* to potential adopters may be quite invariant with the spatial pattern of the availability of *information.* Primarily, this research consists of revising the quantitative theory of the spatial diffusion of innovation so that it considers *market factors* (those related to acquisition of the innovation) as well as *information factors* (those related to the acquisition of information about the innovation). For market factors, the model employs distribution policy of the propagator of the innovation and shopping trip behavior of potential adopters. Information factors include consideration of the mass media, interpersonal communication, the effect of contact with the innovation in the market. Evaluation of this model employs empirical data describing the diffusion of television receivers through an area in Southern Sweden. The completely random model proves inadequate, but it is successfully modified by incorporating a theory of personal communication behavior which assumes that messages are sent only to a restricted circle of acquaintances. As background, the existing quantitative theory of the spatial diffusion of innovation is delineated. Its basis has been proved by Torsten Hagerstrand, the Swedish geographer. However, his theory is modified, both in its conceptual framework and in its quantitative expression, by incorporating aspects of parallel work from epidemiology and mathematical biology. Also, a recurrent spatial-temporal pattern of diffusion, which existing theory does not account for, is identified. This pattern is one which characterizes innovations from which the distributor stands to gain by rapid propagation, e.g., innovations of commercial or manufactured goods, and it is evident when diffusion is viewed on a landscape containing several central places.

UTILIZING INFORMATION/ KNOWLEDGE

SURVEY

Brownson, H. L. Research on handling scientific information. *Science,* 1960, 132, 1922–1930. (I; Classifying information/knowledge, Information retrieval, Information-handling systems)

The author describes current research on the handling of scientific information in an effort to indicate the present scope and objectives of such work and the importance of further research in the field. An example is the experiment by Ramo-Wooldridge, made with automatic text searching, comparing results of machine search by subject specialists of the entire collection of articles with results of a search of conventional library subject-heading index. The investigation reported that, on the whole, retrieval effectiveness was rather poor, yet machine search of the texts produced significantly better results than human searching of the subject-heading index. The incentive for devising information-handling systems and for attempting to use machines and new techniques for this purpose is greater in industry than elsewhere.

CHARACTERISTICS OF INNOVATIVE ORGANIZATIONS

CASE STUDY ANALYSIS

Buchanan, Paul C. Crucial issues in organizational development. In Cooperative Project for Educational Development, *Changes in school systems.* Washington, D.C., National Training Laboratories, National Educational Association, 1967. (IV, I; Strategies for effecting change, Evaluation of innovation)

In order for a program to be considered one of organization development, instead of improvement, the planned improvement must have continued under the initiative and with the resources of the organization, after the planned program has ended. In the 10 cases studies there appeared to be three issues crucial to organizational development: introducing a model from which members of the organization can formulate goals, ordering the steps of action so linkage can be made between the initial point of change in the target system and other internal parts of that system, and ordering the steps of action so that linkage can be made between the initial point of change in the target system and the external system with which it is interdependent. There may be other crucial issues which were not covered in the case history studies. There is need for agreement on a format for reporting case histories.

LINKAGE

SUGGESTIONS

Buck, Rodger L. Training social scientists for medical research and teaching. *Journal of Health and Human Behavior,* 1960, 1 (1), 53–55. (III; Middleman role, Interdisciplinary linkage)

The author presents recommendations for the training of *social scientists as linkage agents to medicine.* Doctors are unsuited for this interface because of the rigid and strongly biophysical training they receive, their values of rapid results and strict practicality, the heavy financial and temporal investments of a medical education, the disparity in earnings between medicine and the social sciences, and the apparent or real shortage of physicians. It is suggested that the social scientist wishing to specialize in medicine must prepare himself in the following ways: (1) Secure an interdisciplinary foundation—the social scientist should gain some background in sociology, anthropology, and psychology. (2) Study human physiology—this will give the social scientist an understanding of the roles of the medical, pharmaceutical and technical specialties. (3) Observe and even participate in various institutions. (The important ones are: (a) emergency and outpatient clinic in a city or county general hospital, (b) a private general hospital, (c) a teaching hospital, (d) a psychiatric hospital, and (e) a medical school.)

OPINIONS AND ATTITUDES CONCERNING CHANGE

THEORETICAL ANALYSIS

Budner, Stanley. Individual predispositions and external pressures: A note on determinants of attitudes. *Journal of Social Psychology,* February 1960, 51, 145–156. (II; Resistance to change)

The author reviews a study by I. Mahler reporting a negative correlation between authoritarianism and favorable *attitudes toward socialized medicine among medical students,* and challenges a hypothesis articulated by L. M. Libo who found no relationship between the two variables. Budner makes explicit what are felt to be certain dubious assumptions underlying Libo's hypothesis, studying the relationship between F scores and attitudes toward socialized medicine in four samples of medical students. It was found that favorableness toward socialized medicine was negatively associated with authoritarianism. In addition, the author maintains that his study reveals that the existence of an association between attitudes toward socialized medicine and a particular scale item was to some extent contingent upon the ability to discriminate along the authoritarian dimension. A most reasonable inference would seem to be that the medical school environment has relatively little influence on attitudes toward socialized medicine, and that the attitudes which are held before entering medical school do not change.

DISSEMINATING INFORMATION/ KNOWLEDGE

SUGGESTIONS

Burchinal, Lee. Needed: Local, one-stop information centers. *Educational Researcher,* Special Supplement, 1967, 8–9. (III, I; Utilizing information/knowledge, Research diffusion/ dissemination)

In addition to information services such as ERIC, there is a need for small *local information services.* These small local centers would be staffed with information specialists who would be familiar with all the large information services, would know the operational requirements of the systems, would act as intermediary between the user and the systems, and be able to give feedback to the systems about information requirements of the user. These could be small centers with part time staff or larger full time facilities. The settings for these centers would be regional labs, State agencies, and large school systems.

STRATEGIES FOR EFFECTING CHANGE

ANALYSIS/SUGGESTIONS

Burke, Edmund M. Citizen participation strategies. *Journal of American Institutional Planners,* September 1968. (IV; Use of groups for change)

Five effective change strategies are identified, each seeking to maximize rationality, be sensitive to individual differences, and encourage participation to allay fears, gain advice, and seek cooperation. The *education therapy* strategy focuses on improvement of individuals. Task accomplishment is irrelevant. This strategy does not directly accommodate organization demands. The *behavior change* strategy tries to change individual behavior in order to change group behavior. The focus may be on key people only. The chief method is to involve system members in decisions about and commitments to change. Another strategy uses skilled volunteers as *supplementary staff.* This may be unsuccessful if the professional's advice becomes just another opinion. *Co-optation*—involving groups not normally included in policy-making —increases opportunities for organizations to relate to each other and find compatible goals. The *community power* strategy involves power confrontations and is suitable for groups committed to a cause rather than specific services. Interpersonal problems often reduce its effectiveness.

PLANNING FOR CHANGE

REVIEW

Burke, Edmund M. The road to planning: An organizational analysis. *Social Service Review*, 1965, 39 (3), 261–270. (IV; Process of change, Organizational change)

Health and welfare planning appears to be constantly in a state of flux. The most far-reaching change has taken place in the structure of planning agencies themselves. Three major phases in the development of community planning are reviewed. Oddly, in terms of realizing its stated objectives, the early Council of Social Agencies had the most successful organizational form. The initial objective—to coordinate the service programs of social agencies—was precise and simple. In the second phase, the Community Welfare Council broadened its membership to include unaligned citizens, but it was unable to involve the power structure in operations. The third, and presently emerging, pattern of community planning minimizes, and in a few cases completely abolishes, agency representation. Many of the organizational difficulties that faced the Community Welfare Council, particularly in the area of incentive systems, still confront the newer health and welfare planning agencies.

CHARACTERISTICS OF ORGANIZATION LEADERSHIP

EXPERIMENTAL STUDY

Burke, W. W. Leadership behavior as a function of the leader, the follower, and the situation. *Journal of Personality*, 1965, 33 (1), 60–81. (II; Opinions and attitudes in change, Use of groups for change)

Leadership is a function of three interacting variables—the leader, the followers, and the situation. Five pledges from each of twenty-four fraternities participating in a competitive interfraternity contest performed a clerical and organizational job and a decision-making exercise in order to test this theory. Data concerning ratings of the leader, personal reactions to the task, and ratings of the general character of the group were gathered from a questionnaire given after the performance of each of the two tasks. The leader of a group whose members were high authoritarians tended to behave in an authoritarian manner regardless of his own personality attribute. Likewise, the leader of a homogeneously low-authoritarian group tended to behave in a democratic manner.

ORGANIZATIONAL DEVELOPMENT

EMPIRICAL STUDY

Burling, T., Lentz, E., & Wilson, R. N. *The give and take in hospitals: A study of human organizations.* New York: Putnam's Sons, 1956. (II, IV; Organizational climate, Organizational factors involving innovation, Organizational structure of hospitals)

The subject of this study was the most familiar type of hospital in the United States, the community hospital operated nonprofitably by a voluntary organization. Observations were made of all levels of operation in six hospitals. Hospitals are presented in both their local and historical settings. The organization and development of the hospital power structures are examined, including the relationships between the board of trustees, administrators, and medical staffs. The development, rewards, and problems of various occupations are explored. The admission offices, obstetric departments, medical and surgical floors, operating rooms, outpatient clinics, laboratories, and dietary departments are all described in operation and highlight the interactions between the hospitals' personnel. Major problems faced by the hospitals were those of adjustment to the growth in size and the resulting impersonality of the bureaucratic structure.

HOSPITAL EDUCATION INNOVATION
SURVEY

Butler, J., & Hage, J. Physician attitudes toward a hospital program in medical education. *Journal of Medical Education,* October 1966, Vol. 41. (IV, I; Middleman role, Resistance to change)

The upgrading of patient care through medical education, and attitudes toward this change, were surveyed by interviews over 4 years with 145 of the hospital's physicians, and an additional questionnaire was sent to 160 directors of medical education of which 142 (89 percent) were returned. Change was introduced by adding full-time positions, for a director of medical education (DME) and four assistant DME's. Details of the change to a basically "learn-by-doing" training are given. There was substantial but decreasing resistance to the change, but at the end of 3 years, many of the original staff had left and 40 percent of the total staff still rejected the program. Original staff had been replaced largely by American residents, a result seen as an improvement. The authority of the medical educators and the cooperation and interest of the staff were critical to the program's success. Acceptance was related to a physician's views on the desirability of affiliating with a medical school. The questionnaire survey results indicated that DME's have most authority where hospital Chiefs of Service are strongest, and success depends on this and on the proportion of specialists. The number of board certified doctors relates to the power of the Chief of Service. Various problems specific to the hospital studied are discussed, including the fact that most of the doctors studied had three or more hospital affiliations. One of the most forceful DME innovations was the change from written orders accompanying incoming patients, to telephone conferences between a patient's attending physician and the house resident.

MODELS FOR CHANGE
THEORETICAL ANALYSIS

Cadwallader, Mervyn L. The cybernetic analysis of change. In A. Etzioni & E. Etzioni (Eds.), *Social change: Sources, patterns and consequences.* New York: Basic Books, 1964. Pp. 159–164. (II, IV; Characteristics of innovative organizations, Processes of change, Utilizing information)

The necessary ability of a system, whether social or biological, to change in a changing environment and still to persist is "ultrastability." A large scale formal social organization can be considered a communication network. These organizations can learn and be innovative if they have the facilities (structure) and rules of operation (content). Using a cybernetic model an investigator would focus on such things as: quantity and variety of stored information; structure of the communication network; position, number, function, and time lag of the negative feedback loops; capability of the system's memory; and operating rules. This model could suggest propositions about the adoption of innovation, such as: rate of innovation depends on rules of organization and variety of information; rate of change will increase as rate of change in the environment increases, and a rule for forgetting or disrupting patterns of operation must be present.

EDUCATIONAL CHANGE
ANALYSIS AND SUGGESTIONS

Cady, Louise L. The philosophy of in-service and continuing education. *Mental Hygiene,* 1968, 52, 456–461. (III; In-service education, In-service health education, Organizational and institutional change, Planning for change)

This article is a plea for in-service and continuing education in health fields. The author analyzes the current relationships between in-service education and the health fields, and makes suggestions for implementing better in-service programs. ". . . an employee once trained is not trained 'for always'." With a limited supply of trained individuals, as the most capable are promoted and assume higher duties, gaps in service are created. More and better in-service education is needed to adequately train individuals to assume the duties of vacated positions. Community changes, changes in need for services, new research developments indicate that there must be provisions for on-the-job training. There must be training for individuals assuming new positions as well as in-service training for workers already part of the system. Individuals should be trained to think of education as something they will continue rather than terminate with graduation. With no planned direction and supervision, a worker may accumulate year after year of the same experience, with no professional growth or improvement in patient care. Cady concludes that in mental health there seem to be two needs: a new pattern for continuing education, and a new use of the materials at hand for such education. Suggestions include: developing exchange programs within or between agencies to fill training and experiential gaps; encouraging staff to attend educational meetings; incorporating 15-minute or half-hour weekly sessions into work schedules, including demonstration and practice with new ideas and techniques; and making specific plans designed to meet needs of each division.

DIFFUSION OF INNOVATION

EMPIRICAL STUDY

Camaren, Reuben J. Innovation as a factor influencing the diffusion and adoption process. *Dissertation Abstracts*, 1966, 27 (3–A), 621. (II, IV; Processes of innovation, Educational innovation, Response to innovation)

The purpose of this study was to determine whether innovations as relevant variables influence a differentiation in their social itinerary. A curricular practice (PSSC Physics) and an organizational form of instruction (Team Teaching) were the innovations selected. The investigation involved the adoption of an innovation over time, by an adopting unit (the school), in a given social setting. Findings indicate that diffusion of an innovation is not the result of a single element but rather the result of a complex set of elements, including some pertaining to the innovation. Findings suggest importance of three types of variables related to the diffusion of PSSC and Team Teaching: (1) those related to attributes of the innovation—those which can be considered as intrinsic, such as divisibility, communicability, and costs—and those which accrue to the innovation, such as pervasiveness, compatibility, and legitimacy; (2) those related to the access to and acceptance of influence stemming from outside the system, such access and acceptance depending on the individual's placement in the social structure, the target unit to which the innovation is directed, the extent to which outside agencies actively promote alternatives, or whether the potential adopter actively searches for alternatives; (3) those which may be considered as related to the innovation's unit of adoption, the decision-making ability of the potential adopter, the time of adoption, and the scale of operations of the institution for which the innovation is intended. In general, more rapid acceptance is accorded innovations whose consequences of adoption are insular rather than pervasive, which focus on improving process rather than products, and whose acts of adoption are overt rather than ideological. Innovations in which influence is external to the social system for which intended are apparently unaffected by social systems boundaries, whereas those stemming from inside diffuse faster within than across differentiated segments of community structure. Innovations involving changes which relate directly to the improvement of instruction are difficult to adopt without the pretrained recipient. Adoption of such innovation is frequently due to advocacy by teachers following a relearning experience. Innovations involving changes which lead to more efficient utilization of available talent often are adopted by administrative prescription or are the result of communication of a decision from administrator to teacher.

EVALUATION OF INNOVATION

CASE ANALYSIS

Campbell, Donald T. Reforms as experiments. *American Psychologist*, 1969, 24, 409–429. (II; Regression effects, Staged innovation, Instability of measures)

This article is a discussion of the ways in which improvements in a community or in an institution can be evaluated for their effects on a variety of indices. Recognizing that administrators need to make their decisions "look good," Campbell, nevertheless, thinks it is possible to stage reforms in such a way that they can serve as experiments. Using the enforcement crackdown on speeders which Governor Ribicoff of Connecticut instituted in 1953, the author analyzes trends in a number of traffic measures over the period from 1951 to 1959 as an illustration of some of the possibilities of evaluation of such reform as well as some of the difficulties. Common sources of misinterpretation of trends in social indices following a reform may be revealed when consideration is not given to: maturation of preexisting trends in the community; instability of measures (great deal of variability in the measure to begin with so that year-to-year variations may have less significance); regression effects (the speeding crackdown followed year of exceedingly high traffic fatalities); instrumentation artifacts (reform brings changes in process of measurement itself, i.e., increase in number of patients per capita in response to a mental health education reform may bring about an increase of people seeking treatment with an erroneous conclusion that the education has worsened mental health). Concrete suggestions are proposed in which these misinterpretations can be avoided by: random selection of unit which is to try out new policy or treatment; matching of each pilot unit with a control; taking same measures before and after on both. Where this is not possible, staged innovation within an administrative unit is suggested so that those units which receive innovation last can serve as controls for those which receive it first.

EDUCATIONAL DISSEMINATION

SEMINAR REPORT

Campbell, R. The role of school study councils and local school districts in the dissemination and implementation of educational research. In K. Goldhammer & S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962. (III, I; Research dissemination, Resistance to change, Promotion of utilization, Educational innovation)

The role of school study councils and research bureaus was found to be: identification and study of problems, planning solutions of problems of research, and curriculum guidance. Major problems in the dissemination and implementation of research within school districts which had study councils or research bureaus were problems of communication, inadequate staff and budget, and resistance to change. To help overcome these problems school districts should clarify their positions on research, program to become a part of the research-application process, make use of extra-district agencies' research reports, and establish climates for change.

OPINIONS AND ATTITUDES CONCERNING CHANGE

EXPERIMENTAL STUDY

Canon, L. K. Self-confidence and selective exposure to information. In L. Festinger, *Conflict, decision and dissonance.* Stanford, Calif.: Stanford University Press, 1964. Pp. 83–95. (II, IV; Characteristics of persons in change, Resistance to change)

People prefer to gather information that supports their decisions. They will naturally avoid any dissonant information, that is, any new information that creates a conflict with what they already know and believe. But there are situations in which such a reaction to conflicting information will be reduced or even nonexistent, such as when there is general curiosity, desire to be well informed, and when there are intellectual values about fairness and impartiality. There are two prominent situations in which negative reaction to dissonant information would be especially obscured: where there is (a) potential usefulness of the information, and (b) self-confidence in dealing with such information. An experiment showed that as one's *confidence* decreases, one is less willing to expose himself to dissonant information. Also, as the *usefulness* of the dissonant information decreases, one is less willing to deal with it. However, not all conditions show a preference for reading consonant material. When the dissonant information seems potentially useful, and if the person is confident that he can cope with it adequately, there is a *preference* for exposing oneself to the dissonant material. Another study showed that preference for consonant material is greater when the titles of articles are stated positively; but when the title is negative, there is a preference for dissonant information since the title seems to indicate that the article might point out difficulties and problems that could be *useful* information.

MIDDLEMAN ROLE

THEORETICAL ANALYSIS

Caplan, Gerald. Types of mental health consultation. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 417–433. (IV; Change agents, Models for change, Organizational change, Planning for change, Introducing innovation)

Four types of mental health consultation are identified. Problems and processes of consultant functioning in each type are illustrated with examples from the mental health field. The four types are: (1) *client-centered case consultation* where the problems encountered by the consultee in a professional case are the focus of interest and the goal is to help the consultee find the most effective treatment for his client; (2) *program-centered administrative consultation* where the consultant helps with current problems in the administration of programs for the prevention, treatment, or rehabilitation of mental disorder; (3) *consultee-centered case consultation* where the focus is on the consultee rather than his client and focuses on the consultee's lack of understanding, lack of skill, lack of objectivity and/or lack of confidence and self-esteem; and (4) *consultee-centered administrative consultation* which has as its primary goal helping consultees master problems in the planning and maintenance of programs for the prevention and control of mental disorder and in the interpersonal aspects of agency operation. The consultant has the responsibility of choosing the appropriate type of consultation. This decision should be an explicit judgment which takes into account the needs expressed by the consultees, the policies of the consultant's agency, and the sanction which has previously been obtained from the various authority figures in the consultee's agency.

STRATEGIES FOR EFFECTING CHANGE
EXPERIMENTAL STUDY

Carlson, E. R. Attitude change through modification of attitude structure. *Journal of Abnormal and Social Psychology*, 1956, 52, 261–265. (III; Process of change, Opinions and attitudes concerning change)

This study demonstrates that changes in attitude may occur when such change can be shown to aid persons in attaining valued goals. The subjects' attitudes toward desegregated housing became significantly more positive when they were shown how acceptance of integration would help them achieve four desired goals. The attitude change partially generalized to three related attitude issues.

ADOPTION OF INNOVATION
CASE STUDY

Carlson, Richard O. School superintendents and the adoption of modern math: A social structure profile. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1954. (II; Educational diffusion, Adoption of educational innovation, Adoption rate)

Educational diffusion studies (especially those done by Paul Mort) have previously ignored school officials' characteristics as influencing rates of adoption of innovations. The primary assumption of this study was that the position a superintendent holds in the social structure of school superintendents is directly related to his rate of adoption of educational innovations. "New math" was the innovation whose adoption rate was studied in a countywide interview survey of school superintendents. S-curves of adoption were significantly separate (approximately two years) for superintendents rating high and low on six social structure variables: (a) social network involvment (measurement of friendship choices, amount of self-perceived interaction, and perception of own systems rate of adoption compared with others') and (b) status (education, professionalism, and prestige). Study findings seem to negate two previous assumptions regarding superintendents' effect, i.e., that he is a victim of his budget and that he is a powerless officeholder.

STRATEGIES FOR EFFECTING CHANGE
THEORETICAL ANALYSIS

Carlson, Richard O. Strategies for educational change: Some needed research on the diffusion of innovations. Paper presented to the Conference on Strategies for Educational Change, Washington, D.C., November 1965. Summarized in *SEC Newsletter: Strategies for Educational Change*, 1965, 1 (4), 4. (IV, II; Diffusion of educational innovations, Characteristics of innovative educators and institutions, Evaluation of innovation)

The paper emphasizes diffusion of innovations among schools and school systems. A communication paradigm is used to suggest study of such dependent variables as characteristics of adopting units, position of superintendents in the social structure of other superintendents, nature and extent of communicating channels, and process and basis of decision-making. Before focusing on the study of adoption and diffusion the paper makes two points: (1) evolutionary or natural change is as important to the life of an organization as planned change and therefore needs to be studied; and (2) we should avoid the "victim orientation" in the study of educational innovation whereby schools are considered victims of local educational budgets and community characteristics. An inward look on the patterns of behaviors of school people is recommended.

DIFFUSION RESEARCH
CRITIQUE

Carlson, Richard O. Summary and critique of educational diffusion research. Paper presented at the National Conference on the Diffusion of Educational Ideas, East Lansing, Michigan, Mar. 26–28, 1968. (I; Adoption, Diffusion, Acceptance, Innovation, Adopting units, Communication channels)

Carlson summarizes and critiques the educational diffusion research developed to date, pointing out in cogent fashion its deficiencies and areas for future research. Adoption is defined as the spread of a new practice to and among potential users. The author maintains that the terms "adoption" and "diffusion" describe only a narrow slice of the world of change in education. The life cycle of an innovation must consist of the story of the invention, development, promotion, adoption, diffusion, and demise of the innovation (along with an account of the problems encountered and solution developed in introducing and maintaining the innovation in the school setting, as well as the unanticipated consequences growing out of its use). To date most studies have focused only on the adoption and diffusion aspects of the process. Carlson isolates seven elements in the diffusion process, revealing current inadequacies. He points out that no single diffusion study has taken into account all seven elements. The seven elements are: acceptance (good descriptive studies of acceptance decisions are needed); time (few studies adequately identify the time of the acceptance decision); the innovation (decision of what constitutes a new practice, and classification of educational innovations in order to make results generalizable); adopting units (emphasis of most studies is focus on local school system, neglecting individual teacher and concepts related to organizational theory); communication channels (communication plays a different role in adoption and diffusion processes); social structure (communication and social structure are closely linked, however only one educational study involved social structure as an explanatory variable both in terms of adoption and diffusion); system of values or culture (no researcher has drawn upon culture or values to aid in accounting for spread of educational innovations or rates of adoption).

PLANNING FOR CHANGE
CASE STUDY ANALYSIS

Carmack, William R. Communication and community readiness for social change. *American Journal of Orthopsychiatry*, 1965, 35 (3), 539–543. (II; Community cooperation, Promotional diffusion, Communication research, Opinion leadership, Use of groups for change)

Interpersonal and mass communications play an important part in preparing a community for social change. The preparation of the community for desegregation of public schools in Dallas, Tex., provides a case study of the practical application of communication theory. Source credibility, cooperation of opinion leaders of all relevant community groups, person-to-person communication among peers, effective use of the channels of mass communication, and the central theme of the message to be communicated were given meticulous attention. The Dallas experience illustrates the knowledgeable and planned use of mass media, opinion leadership, and intergroup cooperation in the accomplishment of a general community goal. Specific steps taken by those involved in the preparation for this extensive community change in Dallas are reviewed.

ORGANIZATIONAL FACTORS INVOLVING INNOVATION

SURVEY

Carrole, Jean. A note on departmental autonomy and innovation in medical schools. *Journal of Business*, 1967, 40, 531–534. (II; Innovative medical schools, Inter-departmental exchange, "Real world" link)

The author attempts to determine which of a number of variables are associated with innovation in medical schools. Medical schools were first classified as either innovative or conservative on the basis of curriculum change. (To qualify as an innovating school, a medical school must have initiated revision of its curriculum, of broader than departmental scope, between 1959 and 1964. Those not meeting this criterion were classified as conservative schools.) From a population of 85 medical schools, seven were found to classify as innovating schools. Measures of 18 variables related to size and composition of the student body and of faculty and administrative personnel, to volume and sources of support of research, and to number and location of clinical facilities were secured from all 85 schools. Findings point out that the power structure in many medical schools is changing, for research funding through government sources in recent years has been allocated to the schools themselves rather than to departments or individuals. Departmental autonomy is gradually eroding away in the more innovative schools. Characteristics of the innovative schools include: larger faculties than conservative medical schools; more part-time faculty than conservative schools; and a larger number of departments in the basic sciences and clinical areas. The author concludes that the larger faculties of the more innovative schools are more likely to bring a greater number of innovative ideas and practices into being. The larger number of departments within innovative schools means a greater opportunity for interdepartmental exchanges. The fact that many of the faculty in innovative schools are only part-time means they are probably more in touch with the happenings in the practical world of medicine, and therefore good links between the medical school and innovations being developed in the "real world."

PROMOTION OF UTILIZATION

ANALYSIS

Carter, Launor F. Knowledge production and utilization in contemporary organizations. In T. L. Eidell & J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968. Pp. 1–20. (I; Information transfer, Knowledge utilization, Barriers to utilization)

Carter is concerned with the lack of research payoff to the larger community. The author highlights the problem, explores the results of four projects (Project Hindsight, Tacoma Project, Traveling Seminar Project and Translating Laboratory Research Project) which have dealt with research utilization and offers some suggestions on how knowledge can be used in seeking solutions to major contemporary problems. Moving research results from the library shelf into a functioning role in relevant real world situations delineates information transfer as a national problem. Basic and applied research and technological innovation are reported in numerous documents, journals, government reports, books, etc. The numbers of these and the difficulties in making them available have been increasing for years. Often the carefully reported results are so narrowly restrained or so confined to the laboratory setting their implications for real world problems are, at best, tenuous. In using knowledge to attack major contemporary problems, Carter emphasizes these points: seek the solution within the context of the problem; the solution to contemporary social problems will be complex and many faceted;

certain critical conditions are essential (acceptance and recognition of need for problem solving; available, trained and motivated staff; and available funding support). The concept of assessment is fundamental to solving significant problems. The author suggests a new profession of social or educational engineering needs be developed (to serve a middleman role between the researcher and practitioner, devoted to solving specific problems). A strong point is made that simple solutions and instant experts are counter productive.

USE OF GROUPS FOR CHANGE

PRINCIPLES

Cartwright, Dorwin. Achieving change in people. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 698–710. (IV; Characteristics of individuals in change, Resistance to change)

Drawn from research in group dynamics, the article focuses on the group as a medium for achieving change in individuals, showing how efforts to change behavior can be supported or blocked by group pressures. Since the behavior, attitudes, beliefs and values of the individual are firmly grounded in the groups to which he belongs, Cartwright suggests, ways in which constructive use can be made of group pressures are the thrust of this article. These principles include: (1) if group is to be used effectively, those people who are to be changed and those who are to exert influence for change must have strong sense of belonging to the same group; (2) the more attractive the group to its members, the greater is the influence that group can exert on its members; (3) in attempts to change attitudes, values or behavior, the more relevant they are to the basis of attraction to the group, the greater the influence that the group can exert upon them; (4) the greater the prestige of a group member in the eyes of the other members, the greater influence he can exert; (5) efforts to change individuals or subparts of a group which, if successful, would have the result of making them deviate from the norms of the group, will encounter strong resistance; (6) strong pressure for changes in the group can be established by creating a shared perception by members of the need for change, thus making the source of pressure for change lie within the group; (7) information relating to the need for change, plans for change, and consequences of change must be shared by all relevant people in the group; and (8) changes in one part of a group produce strain in other related parts which can be reduced only by eliminating the change or by bringing about readjustments in the related parts.

COMMUNICATION WITHIN MENTAL HOSPITALS

CASE STUDY ANALYSIS

Caudill, W., & Stainbrook, E. Some covert effects of communication difficulties in a psychiatric hospital. *Psychiatry,* 1954, 17, 27–40. (II; Climate within mental hospitals, Disseminating information, Barriers to communication)

Observation was conducted within a psychiatric hospital to determine the functional groups within the hospital, the flow of communication, ways in which communication is either clarified or distorted as it flows, the interrelationship of events that occur, and the compatibility of the subsystems within the hopsital. The first few weeks of a specific patient's stay in the hospital and the actions surrounding a petition circulated by patients are reviewed to illustrate how the structure of the hospital and friction between subsystems influence the behavior of the patients and the actions of the staff. Because of lack of mobility between levels of hospital personnel, each level develops its own system of values which hinders communication. Lines of authority tend to be confused and lack organization. The most effective means of communication seem to be informal channels. In order for the goal of psychotherapeutic care to be achieved, administrative procedures should be subordinated to the goal.

ADOPTION OF INNOVATION
SURVEY/SUGGESTIONS

Cawelti, Gordon. Innovative practices in high schools: Who does what—and why—and how. *Nations Schools,* 1967, 79, 56–88. (II, I; Strategies for innovation, Strategies for change, Change process, Planning for change)

This study was undertaken to determine the adoption status of 27 important educational innovations. Through a nationwide survey of 7,237 accredited high schools, the author attempts to highlight the differences between innovative and noninnovative schools. Finally, he gives the reader some insight into how to go about change by having some of the more innovative schools surveyed relate their experience and advice. Major findings were (a) the typical high school reported in the survey used only 6 of the 27 innovations listed; (b) the most innovative schools were the large public suburban high schools spending more than $650 per pupil; (c) schools with larger enrollments tend to have more innovations; (d) the diffusion rate of new ideas is more rapid than previously, but still slow; (e) cost appears to be a retarding factor in many cases; (f) certain kinds of administrators seem to facilitate innovation, producing change even when funds are limited. Concrete suggestions for strategies of change cited by the schools included the advice that change is a process that takes time. One school followed a careful 3-year plan of change: the first year devoted to accommodating the innovation, the second year to changing the people involved, and the third year focused on changing the curriculum and learning materials. Factors found to be instrumental in making the change effective included giving teachers plenty of latitude in proposing alternatives, stressing the advantages of the innovation, interacting and open exchanging of differences on change proposals. Important was the feedback from both teachers and students in identifying and correcting problems. Frequent meetings with teachers and administrators in both large and small groups for discussion of issues related to innovations were found to be imperative.

EDUCATIONAL INNOVATION
SYNTHESIS

Chase, Francis S. *The educational laboratories: How do they fit into the future of American education?* New Orleans Meeting of the Laboratory Directors, Jan. 15, 1967. (I, III; Diffusing information, Research-practitioner collaboration, Linking organizations)

Education research laboratories are not effectively solving the lack of applied science in the field of education. They should serve as linking agents and should perhaps be continually meshed with both theoreticians and "consumers." Stricter definitions of the laboratories' areas of concern are needed. They should not try to serve too many (or a few very powerful) constituencies. Governing boards should define the lab character and its relationships to other institutions. Long-range planning, hinging on federal support, is stressed, as is the building of confidence to keep a lab operating despite funding difficulties with short-range grants. Weaker labs should be eliminated and neighboring ones should avoid overlapping. New technologies of self-evaluation are needed to prevent the labs from intervening in education without knowledge of possible consequences.

EDUCATIONAL INNOVATION
FIELD STUDY

Chesler, Mark A. *Social structure and innovation in elementary schools.* (Doctoral dissertation, University of Michigan) Ann Arbor, Mich.: University Microfilms, 1966. No. 67-8227. (II; Organizational climate, Characteristics of innovative teachers)

The author's purpose in this doctoral thesis is to study the *relationship between teacher innovativeness and the internal staff relationships* in a sample of 16 elementary schools. An innovation is defined as a new or unusual teaching practice a teacher reports he is using, or that a peer reports a colleague is using. Among the elements of the staff social system studied are teacher background and demographic variables; teachers' perceptions of and attitudes toward their peers; teachers' perceptions of and reactions to the principal's behavior; common staff attitudes; structure of staff social relations; principal's priorities; and principal's sensitivity to issues of staff social relations and innovation. Findings reveal that educational level, teaching experience, and felt and desired influence appear to be positively and significantly related to one or more of the dependent variable measures. Some aspects of teacher-peer relations also appear to be positively and significantly related to one or more of the measures of innovation. Recommendations for further study are suggested in the areas of seeking information on teachers' values regarding their classrooms and the process of education, teachers' personalities, and their attitudes toward school and education.

RESEARCH-PRACTITIONER COLLABORATION
CASE STUDY

Chesler, M. & Flanders, M. Resistance to research and research utilization: The death and life of a feedback attempt. *Journal of Applied Behavioral Science,* 1967, 3, 469-487. (III; Applied research, Research feedback, Research process)

This article illustrates how difficult true collaboration is, even for the behavioral scientist, in an account of two meetings at which researchers in a school system reported back to school principals about their findings. At the first meeting the researchers were greeted with distrust and skepticism, but the principals asked for additional information which had not been included in the first analysis. The researchers complied and found that in the second meeting they were able to achieve a collaborative relationship with the principals. The authors analyze the forces operative in the two meetings and conclude with a summary of the "rules of the game" for such planned interventions. Rules of the game which the authors cite apply not only to feedback attempts but to the whole process of research in an applied setting. They suggest four steps: (a) client preparation and contract formation in which the scientist explains what he wants to do and gains client agreement (both give up the expectation that dogma will emerge from the study); (b) establishment of trust in which the scientist explains his own values and his acceptance of the client's and is candid about his personal and professional limitations (demonstrating that the practitioner can feel safe in dealing with sensitive issues); (c) demonstration of valued resources in which the scientist presents observations tied to relevant practitioner criteria (so that practitioner can act upon them); (d) facilitation of autonomy in which the scientist promotes collaboration rather than dependency and gives the client the encouragement and skills to proceed further on his own.

LINKAGE/ ORGANIZATIONAL CLIMATE

REVIEW

Chesler, M. A. & Fox, R. Teacher peer relations and educational change. *National Educational Association Journal,* 1967, 56 (5), 25–26. (IV; Climate for change, Change process, Planned change, Interpersonal processes)

The authors explore and stress the importance of interpersonal relationships within the school as factors in the change process. They feel that the roles of the individual teacher and the faculty peer group in initiating and maintaining the change process have been largely neglected in studies of planned change. Generalizations drawn from this research review include: (1) opportunities for formal and informal associations with colleagues encourage teachers to share their ideas about change, such teachers are more likely to know and support each others' innovations than those who do not have this kind of association; (2) sometimes the faculty is so organized it blocks the sharing and dissemination of new ideas (new teachers in a system eager to try new ways only to be blocked by an established culture dominated by older teachers who do not welcome the suggestions of new recruits); (3) teachers who, as a group, feel powerless, isolated, uninvolved, and dissatisfied with their roles, are not likely to instigate change; (4) teachers need to feel involved and potent in their organization in order to support educational change, and need backing of their fellow teachers and administrators before they are willing to try new ideas; (5) establishing a healthy climate for change, there is first a need to develop ways for individual teachers to share new ideas with other staff members and gain support for worthy innovations; (6) suggestions for adopting new administrative styles which decentralize decision-making enabling teachers to be involved in developing innovations and change; and (7) in-service programs—going beyond the traditional college extension courses to workshops or laboratories—which help teachers perfect problem-solving skills, exploring interpersonal processes, openness of communication, and analysis of the field of forces affecting efforts to change.

EDUCATIONAL INNOVATION

CASE STUDY ANALYSIS

Chesler, M., Schmuck, R., & Lippitt, R. The principal's role in facilitating innovation. *Theory into Practice,* December 1963, 2, 269–277. (II; Organizational climate for change, Leadership style)

The authors report on a pilot study that was designed to determine the influence of the principal's behavior on the development and sharing of innovative classroom practices (i.e., new to that particular teacher). Teaching is improved when teachers can share ideas and experiences, and staff interpersonal relations influence such sharing. The role of the principal in this process is both direct, in encouraging or discouraging an atmosphere supportive of experimentation and sharing, and indirect, in that his style of leadership may encourage staff relations that make the teachers comfortable when discussing innovative attempts. The factors most relevant to teachers' initiating creative efforts were found to be: (1) new practices could help solve problems important to them and their students, (2) a given practice is easily adaptable to their own teaching style and therefore does not necessitate a great expenditure of time and energy, and (3) the school administration will support new practices. Accuracy of the principal's sensitivity to his staff's interests and perceptions also affected innovations (a difference of 1.4 innovations per teacher in the study). Such sensitivity seemed to indicate a higher value for improving and evaluating classroom procedures and encouraging teacher growth than for efficient management.

STRATEGIES FOR EFFECTING CHANGE

THEORETICAL ANALYSIS

Chin, Robert. Basic strategies and procedures in effecting change. In E. L. Morphet & C. O. Ryan (Eds.), *Designing education for the future No. 3: Planning and effecting needed changes in education.* New York: Citation Press, 1967. (IV; Change agents, Educational innovation, Introducing innovation, Process of change)

This paper presents an overview of the strategies and procedures for effecting planned change, which may be applied to the field of education. There are three types of strategies: *empirical-rational approaches,* illustrating the benefits of the desired change; *normative-reeducative approaches,* centering on the attitudes, values, motivations, and interrelationships within the client system; *power approaches,* using power to bring about compliance and submission. When selecting a strategy for change, the needs of user, values of user, and nature of the problem should be considered. In order to blend and make best use of these strategies, specially trained and skilled change agent teams may need to be developed.

MODELS FOR CHANGE

THEORETICAL ANALYSIS

Chin, Robert. The utility of systems models and developmental models for practitioners. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 297–312. (I, III; Change agents, Process of change, Planning for change)

The primary concern of this paper is to illustrate some of the major kinds of analytical models and conceptual schemas that have been devised by social scientists for the analysis of change. The practitioner uses a model as a diagnostic tool for planning change. There are two major categories of models, the systems model and the developmental model. The major terms used in each type of model are defined. For the systems model this includes system; boundary; tension, stress, strain and conflict; equilibrium and steady state; and feedback. The terms defined for the developmental model are direction, identifiable state, form of progression, forces and potentiality. Five key questions are raised regarding the change agent and models: (1) does the model account for stability and change? (2) where does the model locate the source of change? (3) what does the model assume about the determination of goals and directions? (4) does the model provide levers for effecting change? (5) how does the model place the change agent in the scheme of things? Each model is examined in light of these questions. There is an emerging third model, a model for changing. This incorporates features from both the systems and development models. In this model direct attention is paid to the induced forces producing change. There are limitations to those models, but the planning of change must proceed with the diagnostic tools available at the same time that models are improved and developed.

STRATEGIES FOR EFFECTING CHANGE

THEORETICAL ANALYSIS

Chin, R. & Benne, K. D. General strategies for effecting change in human systems. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 32–59. (IV; Institutional change; Promotion of change; Classifying strategies for change)

There are three types of categories of strategies for change, each with its historical and philosophical base. *Empirical-rational* strategies are based on the assumption of the rational man who changes his behavior on the basis of proper information and knowledge in response to environmental stimuli. These strategies include basic research and dissemination through education; proper personnel selection, assessment and replacement as key to carrying out the educational and other enterprises; systems analysts; applied research and linkage systems for diffusion of research results; utopian thinking as a method of forecasting problems; and perceptual and conceptual reorganization through clarification of language. *Normative-reeducative* strategies are based on the view of man's transactional relationship to the environment. Intelligence is developed socially, not individually. Change is brought about by developing a system's capacity for problem-solving by (1) scanning for the detection of problems, diagnosing the problems to determine relevant changeable factors, encouraging collaborative efforts among parts of the system; and (2) fostering growth and development in people who make up the system to be changed. *Power-coercive* approaches view power as an ingredient of all human action and seek to mass economic and political power behind change goals by nonviolent tactics, use of political institutions, and recomposition and manipulation of power elites. Methods for implementing the above strategies are presented and discussed as is the relationship between the strategic types.

EDUCATIONAL DIFFUSION
FIELD STUDY

Clark, D. F. The function of the public exhibition as mental health propaganda. *International Journal of Social Psychiatry,* 1958, 4, 43–54. (III, II; Promotional diffusion)

Eight hundred questionnaires incorporating the Maudsley Medical Questionnaire were distributed to a random sample of attendants at a *mental health exhibition* aimed at recruiting psychiatric nurses and developing interest in mental health. (1) Of the respondents (37 percent), all expressed strongly positive attitudes to such exhibitions, regardless of degree of neuroticism of respondent. (2) Significantly more women than men attended. (3) The females who attended were significantly older than the population at large but were not significantly older than the men who attended. (4) Attendants at the exhibition were more intelligent than average. (5) Attendants were more neurotically inclined than average. (6) Female attendants were more neurotic than male attendants. (7) Items with a strong visual content were accorded most value. The Ministry of Health wall display panels appeared to be vitally necessary for the success of the exhibition. (8) Methods of psychiatric investigation shown were accorded less value than methods of treatment exhibited. This would be expected from such a population and fits in with the tendency for attendants to repress their neuroticism and with the finding that only one in twelve attendants had ever in fact attended a psychiatric clinic. (9) Positive attitudes to mental nursing were found in only one person in every three, and there was no significant difference in the degree of neuroticism between those with negative and positive attitudes. In general, it is concluded that such exhibitions appeal to the wrong age group and that the nature of the content attracts unduly neurotic personalities not likely to make suitable psychiatric nurses, in spite of their intelligence. On the other hand, a strong visual appeal is made by such exhibitions and in view of the population they attract the general educative and possibly therapeutic value they have may serve a definite social purpose.

LINKAGE
ANALYSIS

Clark, David L. The function of the United States Office of Education and the State Departments of Education in the dissemination and implementation of educational research. In K. Gold-

hammer & S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962. Pp. 105–127. (III, I; Education extension service, Middleman role, Demonstration centers, Extension specialist role)

In this provocative paper, the author advocates an extension service role for the federal and State governments in order to ensure the necessary changes in our educational programs and systems. Based upon his insights and observations, Clark compares the diffusion of innovations and information in agriculture with that in education, pointing out that the methods utilized by agricultural departments are clearly more efficient. Years ago, in agriculture, the primary vehicle of communication from the researcher to the practitioner was the printed word, and the impact was slight. Education today is still too reliant on the printed word as the main communication channel, the author observes. Historically, in agriculture two levels were interposed between the researcher and the practitioner: (1) the extension specialist who read and translated research for (2) the county agent who in turn made it possible for the farmers to understand its significance for them. The county agent was encouraged to make use of demonstration projects to drive home his points. The author advocates an extension service in education using federal funds to establish cooperative programs which could result in a nationwide network of experimentation and demonstration centers employing the best that is known about the ways in which change in practice can be effected. "The total cost of such an educational extension service would not be great. If one-half of 1 percent of the total cost of education were devoted to this effort, and much of the expense would be met by redeploying existing resources, the extension service could be initiated and moved ahead at a rapid rate." Concluding, the author comments that the extension service is only one way of taking into account the passive or slightly resistant role of many practitioners.

USE OF GROUPS FOR CHANGE

DESCRIPTION/ANALYSIS

Clark, James V. Authentic interaction and personal growth in sensitivity training groups. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 395–406. (IV; Process of change)

Personal growth occurs in a training group through the quests of members for congruent and authentic interaction with the trainer and with each other. The sequence of authentic interaction and personal growth is: (1) a member of the group exhibits incongruent behavior, that is, he is not fully aware of his feelings and reactions or is not communicating his feelings; (2) the group confronts him with his incongruous behavior; (3) the member perceives aspects of his behavior that are at variance with his self concept; (4) the member integrates the new perception of reality; (5) his behavior changes accordingly; (6) other members have negative feelings about the new behavior; (7) they act incongruously with their previous step of effecting the change in behavior; (8) the new incongruity is communicated by the members of the group; (9) the sequence repeats itself. The author analyzes each of these steps and dissolves some of the false distinctions between group training and group psychotherapy.

ORGANIZATIONAL DEVELOPMENT

PRINCIPLES/ CASE STUDY ANALYSIS

Clark, James V. A healthy organization. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 282–296. (IV;

Organizational climate, Organizational change, Organizational cooperation, Response to innovation)

A healthy organization must take into account two tendencies: (1) *reactive* or maintenance of equilibrium; and (2) *proactive* or growth or development of complexity. The tendencies must be considered at all levels: individual, small group, intergroup and total organization. Examples of proactive and reactive tendencies are given for each level. Unhealthy and healthy organizations are illustrated. In the healthy organization the norms surrounding training, development, promotion and transfer serve to promote the proactive and reactive tendencies on all levels. Training occurs on the job. Men are rewarded for learning new tasks, but are not pushed into such behavior. There is group cooperation around tasks and emergencies. Decision-making deals with intergroup reciprocity and a less than ideal solution to a problem may be selected in preference to one with detrimental consequences for one or another group. The result is regard for both humanism and efficiency which can and should be the objective of planned activity.

USE OF GROUPS FOR CHANGE
EXPERIMENTAL STUDY

Coch, L., & French, J. R. P., Jr. Overcoming resistance to change. In E. Maccoby et al. (Eds.), *Readings in social psychology*. New York: Holt, Rinehart & Winston, 1958. (IV; Strategies for overcoming resistance to change, Characteristics of persons in change)

A study was done to determine why retraining after transfer of an experienced employee took longer than training a new employee. It was found that conflict between two forces, motivation toward reaching the production goal and difficulty of the job, produced frustration. This frustration caused a high rate of absenteeism and turnover both right after transfer and just before reaching the production goal. The first peak in rate of turnover, after transfer, was due to job difficulty; the second peak was believed to be due to cohesiveness of the work group. If the cohesive group is antagonistic toward management then they often set their own production goals below management's. An experiment was set up in which the transfered groups had either no participation, participation through representation, or total participation in planning their new working conditions. It was found that the rate of retraining was directly proportional to the amount of participation; the rate of turnover, inversely proportional.

REJECTION OF INNOVATION
CASE STUDY

Coe, R. M., & Bernhill, E. A. Social dimensions of failure in innovation. *Human Organization,* 1967, 26, 149–156. (II; Adoption and rejection, Planning for change, Resistance to innovation, Perceived need for change, Adoption rejection process)

The authors analyze the adoption and eventual rejection of a technological innovation in a community general hospital in order to gain some insights into a system's rejection of a technically sound and potentially successful innovation. They attempt to explain some of the reasons for the failure of a planned change. This study was a before-after longitudinal investigation of the accompanying changes in the attitudes and practices of nursing personnel when a new system of processing medications was introduced at a community hospital. When the "before" data was collected none of the nursing personnel nor medical staff had any knowledge that such a change was being planned. The two-phase design for the collection of post data developed information just after initiation, and after an interval of time necessary for it to become routinized. Attitudes of nursing personnel toward the old system were compared with those of the physicians while it was still in use. Changes in responses from Time 1 to Time 3—the shifts in attitudes over time after the introduction of the new system—were also analyzed. Despite the technical success of the new system, it ultimately failed—within a few months of installation, the system reverted to the process used three and one-half years earlier. Findings reveal several reasons for the innovation rejection: the personnel's relative satisfaction with the then-existing medication system (a perceived need for the change was missing); an inability of the new system to meet personnel expectations; and, hostile attitudes toward the change agents. Discussion points raised in an attempt to explain the adoption rejection process are: the *Halo Effect* (an initial favorable response to one aspect of new system—procuring); *Loss of Authority* (the innovation disrupted the social organization of the nursing unit); and the *False Positive* (possibility that nurses answered questions the way thought to be desired by interviewers). This study highlights the importance of perceived need for change in the adopting individuals. It is speculated that if the hospital staff had been involved in planning and implementation of the change, it may have been successful.

RESEARCH-PRACTITIONER GAP

ANALYSIS

Cohen, Julius. Factors of resistance to the resources of the behavioral sciences. *Journal of Legal Education,* 1959, 12, 67–70. (III; Resistance to research utilization, Professional change agents, Research relevant to practice)

This article identifies and briefly discusses three sources of resistance to behavioral science research that are common to practitioners in most fields. Sources of resistance in practitioners are: (1) the resources of the behavioral sciences have not been aimed to answer specific and practical problems (concreteness required by practitioners is often viewed as trivial by researchers); (2) a feeling that behavioral science resources have yielded findings that are much too unripe and too tentative for reliable use in predicting human behavior; and (3) a fear of inability to cope with the enormous task of mastering these resources and shaping them to his own needs.

ADOPTION OF INNOVATION

SURVEY

Coleman, J. S., Katz, E., & Menzel, H. *Medical innovation: A diffusion study.* New York: Bobbs-Merrill, 1966. (II, III; Characteristics of innovative persons, Introducing innovation, Educational diffusion, Promotional diffusion, Disseminating information, Middleman role)

Through the use of actual prescription data, the authors studied the introduction of a new drug and its acceptance among physicians. Conclusions showed that: (1) social intermediaries were more influential than impersonal medias such as professional journals; (2) the greater the physician's involvement in the medical community, the greater likelihood of early adoption of the drug; (3) professional interaction tended to produce adoption behavior more quickly than did friendship; (4) innovators tended to be specialists rather than general practitioners; (5) innovators typically had greater number of different institutions in their backgrounds; (6) innovators were more interested in medicine as a science; (7) innovators were more likely to select colleagues as social companions, and (8) at least two communication channels were used by most physicians before drug adoption.

USE OF GROUPS FOR CHANGE

DESCRIPTION

Collins, B. E., & Guetzkow, H. *A social psychology of group processes for decision-making.* New York: John Wiley & Sons, 1964. (IV; Opinions and attitudes in change)

There are three factors which may lead to higher productivity by a group than by individuals working alone; they are more extensive resources, a variety of social motivations, and numerous social influences. The performance of the group is dependent on the task; it should require a division of labor and not a duplication of effort. The influence of the other members of a group can either increase or decrease the performance of an individual member. Group performance depends on the ability of its members to pattern and integrate their skills and relationships. An assembly effect is achieved when group productivity exceeds that of a single individual or collection of individuals working alone. A member of a group may have direct power, control over rewards or punishment, or indirect power, status due to past performance. High power members have more influence, are less affected by others, and tend to form cliques. Low power members will be suspicious of high power persons, will behave deferentially toward high power members unless supported by their peers, and will be threatened by ambiguity in relations with high power members.

PROMOTION OF UTILIZATION

CASE STUDY

Cooper, C. R., & Archambault, B. (Eds.) *Communication, dissemination and utilization of research information in rehabilitation counseling.* Proceedings of a regional conference sponsored by the Department of Guidance and Psychological Services. Springfield, Mass.: Springfield College, 1968. (In collaboration with Rehabilitation Service Administration, Department of Health, Education, and Welfare. Research Grant No. RD–2510–G.) (I; Communication opinion leaders, Utilization conference)

The purpose of the conference, as reported by the authors, was to stimulate the interest of vocational rehabilitation administrators and practitioners in the communication, dissemination and utilization of research results. The conference was designed to maximize the meaningfulness of the experience for participants and to secure long-range results from the effort. The proceedings serve as a case study of this effort. It was found that: (1) holding the conference in two parts, each consisting of two days, and separated from one another by a period of 3 to 4 months, provides a more meaningful experience for participants than holding a conference for four consecutive days; (2) providing the participants with an opportunity to determine the program for the second part of the conference increased their involvement with the issues being considered; (3) providing the participants with research materials between the first and the second parts of the conference, relevant to topics in which they had expressed an interest, facilitated the acquisition and reading of research by the participants and increased their receptiveness to such materials after the conference. The authors report that individuals are more stimulated to seek out and to read research reports if their participation at a conference results in their developing guidelines to promote the use of such materials by themselves and by their colleagues in their respective settings, than if they are provided with a relatively passive experience. A post-conference followup, conducted 2 months after the conclusion of the conference, indicated that participants were favorably influenced by the conference, specifically in terms of more interest in and more reading of research materials.

COMMUNICATION RESEARCH
EMPIRICAL STUDY

Corrozi, J. F., & Rosnow, R. L. Consonant and dissonant communications as positive and negative reinforcements in opinion change. *Journal of Personality and Social Psychology*, 1968, 8 (1), 27–30. (II, I, III; Opinions and attitudes in change)

It has recently been found that when positive or negative reinforcements are presented immediately before or after the usual two-sided persuasive communication, opinions tend to change in the direction of whichever arguments are closer in time to the positive reinforcement or farther from the negative reinforcement. Based upon this finding, and in light of the discovery by Golightly and Byrne (1964) of the positive and negative reinforcing properties of consonant and dissonant attitude statements, primacy was predicted if a two-sided communication either followed a consonant communication or preceded a dissonant communication. Recency was predicted if a two-sided communication either preceded a consonant communication or followed a dissonant communication. Results supported three of four predictions; only the retroactive effect of the dissonant communication failed to achieve significance.

PLANNING FOR CHANGE
ANALYSIS

Costello, Timothy W. Change in municipal government: A view from inside. Paper presented at the meeting of the American Psychological Association, San Francisco, Calif., September 1968. (IV; Organizationl change, Barriers to change, External intervention)

This paper analyzes the *mechanism of change within the context of a political setting.* The author prepared the material from his vantage point as Deputy Mayor-City Administrator, New York City. The concepts are formulated not only on the basis of the literature, but also on the basis of Dr. Costello's personal involvement in municipal government. Organizational change is classified as either input or output. Examples of input: changes in leadership, in structure, in process (technical or social), in resources, (fiscal, human, physical). Examples of output: changed goals, greater effectiveness in achieving goals, increased efficiency, better morale, changed relationships with the market (or, in the case of a government unit, the service base). The author identifies significant management differences between the public and private sectors which are relevant to the subject of change: (1) periodic changes in top leadership are more drastic and far-reaching in the public sector than the private; (2) the products of public agencies (services) are more difficult to quantify than that of private enterprise; (3) the constituency of a government agency is highly heterogeneous, tending to delay the change process and to dilute change decisions into compromise; (4) change in the public sector has higher visibility (hence it is riskier) than in the private sector; and (5) public agencies have less freedom to make their own decisions than do private organizations. The following are types of changes cited by the author: (a) planned changes (reorganization of governmental structure); (b) a confluence of force (the school decentralization in New York City); (c) event-dominated change (New York sanitation strike); (d) accidental innovation (the fortuitous modification of an air pollution control law); (e) external intervention (federal law and federal money as in the Model Cities program).

ORGANIZATIONAL CHANGE
THEORY AND PRINCIPLES

Costello, T. W., and Zalkind, S. S. (Eds.) *Psychology in administration.* Englewood Cliffs, N.J.: Prentice-Hall, 1963. (IV; Resistance to change, Change process, Change agent, Problem-solving activity, Attitude change)

This book presents an application of psychological theory and principles to the business administration setting and the problem of understanding and facilitating organizational change. The concepts in this text are based on a review of research from various subfields of psychology. Forces operate against the ready response of an organization to the need for change when: (1) those high in the organization may be reluctant to change what has worked well for them in the past; and (2) those immediately below top management may oppose change (they may distort data reaching the top, since, for example, change may eliminate systems they have established). It is found that the change process hazards may appear early within an organization, and the rewards late, perhaps even after the men at the top of the hierarchy are gone. It is suggested that in considering whether or not to change, three interacting and interdependent processes of change must be analyzed: (a) the decision to change can set new overall organizational objectives; (b) the decision to change can prescribe changes in the organization itself, in its size, its structure, or its processes; (c) the decision to change may involve replacing significant personnel. It is pointed out that the administrator in his role as a change agent is a manager of reinforcement (placing emphasis on intrinsic reinforcements such as salary and fringe benefits). Various conditions facilitating attitude change include: role playing, interpersonal pressure, behavior legislated for or required of an individual, information relevant to a person's needs, situational changes, and participation. There are three main organized attitude change procedures used in industry: (1) management development, (2) human relations programs, and (3) participation methods. In problem-solving, which is often an essential part of change, aspects in the environment relevant to success are: (a) access to necessary information; (b) relief from the pressures of routine; (c) motivation through a system of rewards or sanctions; (d) stimulation from interaction with other professions; and (e) freedom from rigidity or threats in the environment. The emphasis of this text is to develop change experts knowledgeable in learning, attitude, and problem-solving research.

CHANGE OF OPINIONS AND ATTITUDES

EMPIRICAL STUDY

Cottle, Thomas J. Strategy for change. *Saturday Review*, September 20, 1969, 70–82. (IV; Planning for change, Resistance to change, Community cooperation, Use of groups for change)

Three steps were undertaken by the Bristol township educational establishment to lessen the racial tension in the township: the building of new schools as well as increasing the community-school program, bussing black students from overcrowded areas, and establishing an Intergroup Education Committee which was a direct outcome of a training program on human relations conducted by Max Birnbaum. The program used sensitivity training to aid in interpersonal understanding, had full support of all top-level personnel, and included the entire school community. It was aimed at personal growth to facilitate organizational change; focus was on actual problems faced by both individuals and the schools. The program attempted to overcome resistance to change by showing prejudice to be a normal human condition, thus easing the defensiveness, fear of exposure, and guilt of the participants. The program worked with both the school staff and community representatives. There were two kinds of training groups, one which met for 5 days to train people who could help create a climate of mutual respect, and one which met for 2 days, encompassing more people, to heighten their awareness of human relation problems. Since the program there did seem to be a lessening of racial tensions and a willingness to discuss problems that arise.

PROMOTION OF UTILIZATION
ANALYSIS

Criswell, Joan H. Research utilization in poverty situations. *Rehabilitation Record,* March-April 1969, 7–11. (I; Utilization conference, Consumer participation)

This paper explores ways in which the techniques and approaches of vocational rehabilitation, developed through research and demonstration projects, can be applied to persons living in poverty. The author identifies the research conference as an effective utilization technique which "most typically occurs when one or more projects have come up with enough promising findings so that the time seems ripe to take stock of what is known, acquaint the consumer with what is now ready for application, and point the way to gap-closing or consumer involvement research projects." A new trend is clarified: When potential recipients of a rehabilitation service take part in the planning of a demonstration project, then help to carry it out, the result is virtually "instant" utilization. This type of self-directed activity is found to be particularly appropriate for demonstration projects among the economically disadvantaged (the ultimate consumer sharing in the planning suggests an interesting extension of the idea of having practitioners take part in planning research efforts).

RESEARCH UTILIZATION PROCESS
CASE STUDY ANALYSIS

Croker, George W. Some principles regarding the utilization of social science research within the military. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science,* Vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 112–125. (I; Change process, Social science research utilization, Behavioral science utilization, Promotion of utilization, Middleman role)

The author undertakes to use the Air Force as a laboratory in which to examine the process of change. Drawing from his experience in a military setting, he proposes to develop some principles that govern the utilization process—if not social change itself. Some generalizations are made concerning the problem of utilization of social science research within a military setting: (1) in the social sciences, utilization of research is inseparable from the conduct of the research itself (utilization must begin when the research begins, run concurrently with it, and extend beyond it); (2) effective utilization depends on recognition of the total situation that can affect or be affected by the results of the research. The author maintains that effective utilization of social science research, which is designed to aid top policy-makers, must consider the unitary nature of the total process of national security preparation. Positive and continued effort must be exerted to accomplish the changes that research indicates are desirable. In the Air Force setting the linkage should be provided by the use of officers serving as quasi-social engineers rather than by the use of trained social science research personnel because it takes less time to "re-tool" the officer, and the officer exerts a symbolic "plus" for utilization since he is already a member of the "in" group. The author concludes that utilization seldom works on a "shot-in-the-arm" principle; positive and continued effort must be exerted to accomplish the changes that research indicates are desirable.

ORGANIZATIONAL CHANGE
THEORETICAL ANALYSIS

Culbertson, Jack A. Organizational strategies for planned change in education. Paper presented at the Conference on Strategies for Educational Change, Washington, D.C., November 1965. (IV, II; Strategies for effecting change, Planning for change, Evaluation of innovation)

The paper describes the Educational Enterprise as severely underdeveloped in its systems of research, planning and development. It suggests organizational strategies for planned educational change in the theoretical framework of the management of conflict within organizations. The paper identifies and analyzes sets of political and social constraints affecting planned change in American education and suggests four long-term strategies for coping with these constraints: (1) establishment of a national education academy to recruit and prepare personnel to carry out planned change, (2) creation of an institute to study long-term challenges of innovation insulated from the demands to produce immediately practical results, (3) institution of new organizational arrangements to facilitate the development of national and State policies for education, and (4) application of operations research to problems of local school district planning.

RESEARCH DIFFUSION
HISTORICAL ANALYSIS

Dahling, Randall L. Shannon's information theory: The spread of an idea. In *Studies of innovation and of communication to the public. Studies in the utilization of behavioral science,* Vol. 2. Stanford, Calif.: Institute for Communication Research, Stanford University, 1962. Pp. 117–140. (III, I; Process of innovation, Diffusing knowledge, Utilizing knowledge)

This is a historical study and analysis of the spread of the now-famous communication or information theory developed by Norbert Weiner and subsequently Claude Shannon. The author hoped that the study would be applicable to finding out how scientific ideas come into use and how they spread. The idea did not originate in a vacuum. It was closely related to prior and current work in communication engineering to solve the need for more economy in communication. Shannon, drawing particularly on Weiner's consideration of information as a statistical concept, developed a precisely formulated mathematical theory of communication. The idea was developed very rapidly in its original discipline, but there was a time lag before other fields picked it up—starting with psychology which had long recognized the usefulness of statistical tools. The use or nonuse of the idea by non-mathematical disciplines is discussed; perhaps adoption in these fields relates to the idea's analogic and suggestive value to that field. In all fields, scientific and otherwise, journal articles were the chief method of information diffusion, though a book and symposia aided the spread. Complex "family trees" analyze which journal articles led to which other articles and comprise a major section of Dahling's report. Certain idea *centers* seemed important in the spread of the idea, since they concentrated different kinds of specialists who could pick up ideas from each other and extend their applicability. Symposia serve as temporary centers. Printed mass media ignored the idea unless it seemed relevant to certain groups of nonscientists among their readers. The authors conclude that ideas develop from a flurry of related activity and from an apparent need for the idea. The idea spreads fastest in its own discipline, then into disciplines with similar vocabulary, methods and needs. It will be picked up by unrelated disciplines if it has analogic and suggestive value to that field. The idea will be further developed and spread by centers and symposia which encompass many specialties. Newspapers report what people have done but are not particularly concerned with their ideas; some magazines with semi-scientific readerships will report on the idea itself.

PROCESS OF CHANGE
REVIEW

David, Paul T. Analytical approaches to the study of change. *Public Administration Review,* September 1966, 26, 160. (IV; Resistance to change, Channelers of change, Restrictors of change, Taxonomy of change processes)

The purpose of this article is to present ideas on the processes of change and, specifically, the changing relationship between government and the environment. The ideas presented were developed from a seminar course on the processes of change and provide suggestions for structuring and reading. Three basic assumptions provided the framework for further development of ideas: (1) the more important problems of government and public policy are typically the product of processes of change; (2) the major processes of contemporary change are relatively few in number (each has characteristics giving it identity and a degree of autonomy despite the complexity of the interaction among the processes); and (3) it is both possible and important to disentangle the major processes for separate study. A taxonomy of change processes evolved. Change processes include: (a) growth processes and their concomitants; (b) innovative processes of science, technology, and invention; (c) ideological processes, belief systems and their impact; (d) conflict processes—mass conflict, revolution and war; (e) communicative and learning processes; (f) predictive and policy processes; (g) leadership and control processes. All of the processes are clearly involved in a complex interaction with each other, but each has a separate identity. The first four processes are producers of change (desired or not). They may be influenced, controlled, directed, or conceivably stopped completely in some circumstances, but to the extent that they operate, change will occur. The final three processes are preventors of change, channelers of change, or restrictors of change.

STRATEGIES FOR EFFECTING CHANGE

PRINCIPLES

Davis, Sheldon A. An organic problem-solving method of organizational change. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 357–370. (IV; Use of groups for change, Models for change, Organizational change, Organizational development, Planning for change, Process of change)

The culture of an organization as well as the individuals in an organization must change. This means that attention must be given to the value system, the social structure and the technical system of an organization. Central to this effort are: (1) the principles of confrontation and (2) laboratory training viewed as a means not an end so that most of the effort is exerted in on-the-job situations after the people have attended labs and not in the labs themselves. This requires a nonmechanical, organic approach. This kind of approach consists of: (1) ability to view the culture analytically without becoming alienated from it; (2) optimism regarding chances for change since this increases the psychological freedom for introducers of change; (3) a systems approach which increases conceptual freedom; (4) use of consultants for third party facilitation; (5) confrontation and feedback; (6) empathy or "becoming the other"; (7) dealing with problems here and now; (8) multiplier planning which means choosing alternatives with the greatest potential for change; (9) fanning-out so that someone who does something leads to others doing something; (10) alternate acting and critiquing rather than serial action; (11) testing available choices rather than not taking a chance with them. There is an extensive description of the application of these principles in a concrete organizational setting.

EDUCATIONAL INNOVATION

CASE STUDY

Dennerll, D., & Chesler, M. Where do new teaching practices come from? And where do they go? *Michigan Elementary Principal,* 1964, 39 (2), 2. (II; Adoption of innovation, Innovation communication, Innovation dissemination, Promotion of utilization)

Teachers as a rule communicate little among themselves regarding teaching practices and innovations. Yet teachers are naturally creative in their own classrooms, experimenting with new procedures and devices. This untapped reservoir is potentially of great value, as ideas that "start from the bottom" will often find greater acceptance among other teachers. This study tried to encourage teacher innovation and flow of ideas by having teachers collaborate on a list of criteria for good innovative practices. After meeting these criteria, teaching practices were then selected and distributed as a booklet among several schools. Results were favorable for acceptance—with modifications and improvements—of new practices. Individual teacher comments and participation were encouraged to help set up an atmosphere of free exchange of ideas and conducive to further experimentation.

RESEARCH COMMUNICATION
ANALYSIS

Dennis, W., & Girden, E. Do psychologists read? The case of the psychological bulletin. *American Psychologist,* 1953, 8, 197–199. (I; Disseminating knowledge, Research diffusion, Selecting information)

A poll was conducted among a random sample of the APA to determine how many members read various materials appearing in the *Psychological Bulletin.* Approximately 50 percent of the sample responded. It was found that the reader-audience of specific items ranged from 9 percent to 58 percent. The most popular items belonged to several *Bulletin* categories and lay in different areas of psychology. Of the 11 literature surveys appearing on the checklist, seven were read by one-third or more of the respondents. Although less popular items belonged to different categories and different fields, they tended to be statistical in nature and to belong to sections concerned with short articles, notes and film reviews. The data seem to indicate that psychologists while working in diverse fields may, nevertheless, share common interests. If the findings derived from this survey can be generalized, it seems fair to conclude that psychologists not only write but also read.

UTILIZING INFORMATION
THEORETICAL ANALYSIS

Dexter, Lewis A. On the use and abuse of social science by practitioners. *American Behavioral Scientist,* 1965, 9 (3), 25–29. (I, III; Researcher-practitioner gap, Selecting information)

Social workers must learn to overcome the tendency to draw only on the most fashionable social science theories for they often are unrelated to the goals of the practitioner, lack countervailing corrective evidence, and, in their overemphasis, lead to invalid perceptions of client behaviors. While fashion leads to overemphasis, much that is pertinent and relevant is overlooked because it is related to an unfashionable body of knowledge. Thus, social work has neglected relevant insights from the sociology of the professions in its preoccupation with the culture-and-personality school. It has also ignored the unfashionable but highly relevant concepts of political philosophy in dealing with social action and social policy questions. The social work profession has, consequently, failed to examine the societal effects of its having spread the notion that the environment is responsible for people's defects. Its uncritical use of knowledge required for the technical performance of the practitioner's role as justification for political and legal conclusions is indefensible. It would do well to examine unresolved issues, such as the effectiveness of blame, the utility of punishment, and the nature of social responsibility, as a corrective to the humanitarian overemphasis that characterizes the liberal professional.

PROMOTION OF UTILIZATION

CONFERENCE REPORT

Dumas, Neil S. (Ed.) *Research utilization and dissemination: Proceedings of a regional conference.* Gainesville, Florida: Regional Rehabilitation Research Institute, University of Florida, September 1968. (Social and Rehabilitation Service, Department of Health, Education, and Welfare, Research Grant No. RD–2874–G–68.) (I, II; Research dissemination, Disseminating information/knowledge)

The problems of providing an information retrieval system for the rehabilitation service include: the effects of more information on personnel functioning; indexing; the scope of information to be included; and the prerequisites for organizing and maintaining a successful system. The Task Force on Research utilization recommends state-of-the-art monographs; conferences on utilization; change agents; liaison between the research utilization branch and other branches; and on-going evaluation of final reports of research. Suggestions are made to include clients in innovation discussions. Several exhibits are presented of operations research; routine data gathering for use in day to day operation and problems of the rehabilitation agency. A program for operations research includes the role of the research director; suggestions for imaginative dissemination of information; innovation, change agents and a systems concept versus a military or medical model. Other areas of discussion include funding and applying for R. & D. grants; the link between the outcome of research and the goals of the agency; suggested techniques for promoting utilization; reasons for resistance to findings; a list of researchable problems including some for State Agencies and the role of the State Agency in Research.

DISSEMINATING OF KNOWLEDGE

ANALYSIS

Dunn, H. W. The dissemination of medical information. *Pediatrics,* May 1962, 29, 689–691. (I; Utilizing information, Selecting knowledge, Knowledge gathering, Knowledge utilization)

A central problem is the rapidly increasing amount of new information in the medical profession. Many doctors realize this, but many others do not even consider the possibility that they need more information. How does one get new information? Residents are often the best carriers of new information and doctors often go to them for help. There is also the development of a national telephone service where new information is obtained by a team of librarians searching 200 medical journals each month. A subscribing physician may call day or night to receive needed information. The disadvantage of this service is that it may erode the self-reliance of the physician, but on the other hand, the authority involved is invisible. The general conclusion of the author is that given all of the methods for dissemination of medical information, the time-lag is still too long for the physician.

ORGANIZATIONAL CHANGE

EMPIRICAL STUDY

Dutton, John M., & Walton, R. E. Interdepartmental conflict and cooperation: Two contrasting studies. *Human Organization,* 1966, 25 (3), 207–220. (IV, II; Resistance to change, Opinions and attitudes during change, Use of groups in change, Community cooperation)

A study was made to compare and contrast emergent behavioral patterns in two district organizations. The study focuses on how personnel of functionally interdependent departments enter into the process of joint decision-making and otherwise relate to each other. The study is based on data gathered through field observations and interviews. Results of the analysis show sharply contrasting interdepartmental relations at the two organizations studied. Both of the contrasting behavioral syndromes were deemed to be stable and resistant to change.

MENTAL HOSPITAL INNOVATION
EXPERIMENTAL STUDY

Dykens, J. W., Hyde, R. W., Orzaek, L. H., & York, R. H. *Strategies of mental hospital change.* Boston: Commonwealth of Massachusetts, Department of Mental Health, 1964. (IV, II, III; Characteristics of innovative organizations, Introducing innovation, Middleman role, Organizational climate, Change agents, Planning for change, Community cooperation)

This study describes and analyzes the process of innovation in the Northampton Mental Hospital in Massachusetts. The authors found that the morale of a hospital staff is positively related to interaction with members of the outside community. Informal decision-making process does not *by itself* generate change, encourage creativity, or move toward long-range goals. When morale is high, personnel turnover is low. Conclusions also noted that: (1) State mental hospitals are subject to external pressures from outside sources; (2) change efforts should direct hospital people to become their own change agents; and (3) the change strategist can be an important figure in directing personnel.

PROMOTION OF UTILIZATION
MODELS/CASE STUDIES

Eash, Maurice J. Bringing research findings into classroom practice. *Elementary School Journal,* 1968, 68 (8), 410–418. (I; Change agent, Resistance to change, Research consumer)

The purpose of this paper is to examine several approaches to applying research findings in the classroom. The author presents three models for translating research into classroom practice. These models reflect data from the literature and from the author's experiences. Two case studies are presented in amplification of the preferred model (co-action). The process most widely used in bringing research findings into classroom practice is the *displacement model* (the desired change is, in effect, forced upon teachers and pupils because it displaces a similar component). The *authority model* assumes that the classroom practitioner need only to be exposed to research and he will put it to use (research findings are generally introduced without translating them into the context of the classroom practitioner). The *co-action model* is based on the assumption that the use of research findings must be a two-way action that engages the researcher and the practitioner in a mutual task. The author's position is that the element of reciprocity in this model enables it to correct the inadequacies of the other two models. In both the case studies presented in relation to the co-action model, it is noted that the participation involved not only the practitioners (teachers), but also the consumers (pupils). The case studies in both instances highlight the novel and bold involvement of the pupils that resulted in the bringing about of change.

REJECTION OF INNOVATION
INTERVIEW/SURVEY

Eichholz, Gerhard C. Why do teachers reject change? *Theory into Practice*, 1963, 2, 264–268. (II; Resistance to change, Educational innovation, Barriers to utilization)

The author explores the rejection of newer audio-visual innovations in a school environment in order to test his theory of rejection. Eichholz's theory of rejection closely parallels commonly accepted adoption models. He postulates an awareness stage, an indifference stage, a denial stage, a trial stage and finally rejection. A sample of 45 teachers was drawn from five elementary schools in a large metropolitan school system. Selection criteria were: the known innovation rejector, grade level (15 teachers from grade levels 1–2, 3–4, and 5–6), and teaching experience (15 teachers from each of 1–3, 7–10, and over 15 years of teaching). Findings and conclusions reveal that: (1) the attitudes of rejectors were not related to the grade level at which the teacher taught, or to the number of years of teaching experience; (2) the real reasons for rejection and stated reasons for rejection were not always the same; and (3) no teacher rejected *all* of the new media. Suggested ways of overcoming resistance are: (a) circulate information, (b) let innovators lead the way, (c) maintain an environment favorable to experimentation, (d) be sympathetic, wait for pressure for innovation to mount, (e) remain sympathetic to failure for the attempt may eventually lead to acceptance.

REJECTION OF INNOVATION
CASE STUDY ANALYSIS

Eichholz, G., & Rogers, E. M. Resistance to the adoption of audiovisual aids by elementary school teachers. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 299–316. (II; Introducing innovation, Processes of innovation, Response to innovation, Opinions and attitudes concerning change, Resistance to change)

Forty-five elementary school teachers, pretested as rejectors of electro-mechanical innovations, were interviewed in order to uncover their feelings toward audio-visual aids. Rejection responses received were classified as rejection through: (1) ignorance; (2) suspended judgment; (3) situational; (4) personal; and (5) experimental. The authors propose a tentative rejection theory in which the process contains the following phases: awareness, indifference, denial, trial, and rejection.

DIFFUSING INFORMATION
CONFERENCE REPORT

Eiduson, B. T., Brooks, S. H., & Motto, R. L. A generalized psychiatric information-processing system. *Behavioral Science,* 1966, 11 (2), 133–142. (III, I; Research diffusion, Utilizing information, Promotion of utilization, Classifying information, Psychiatric clinic innovation)

Information-processing procedures dealing with case histories in psychiatry have been inadequate for research purposes. A team from the Reiss-Davis Clinic for Child Guidance describes their psychiatric information-processing procedure, the Psychiatric Case History Event System (PsyCHES), which they consider to be useful and efficient. Factual, objective data on a patient are conceived as *events* and serve as the information units in the computerized system. The words, numbers and symbols of an event are recorded, programmed, and incorporated into the Event System. The computerized system is described in great detail in the article and several examples are given. The authors suggest that their system can be used in all installations in which recorded data are collected in diverse ways. Thus, a national master information system could be set up that would be of great benefit in psychiatric research.

INSTITUTIONAL CHANGE
ANALYSIS

Eisenstadt, S. N. Institutionalization and change. *American Sociological Review,* April 1964, 29, 235–247. (IV; Organizational change, Process of change, Resistance to change)

Structural-functional analysis has traditionally been criticized for being incapable of handling the problems of social change. This criticism is challenged in the approach used in this paper. A major point is that the institutionalization of any social system—be it political, economic or a system of social stratification, or any collectivity or role—creates in its wake the possibilities for change. The author defines the process of institutionalization as the reorganization of a societally prescribed system of differentiated behavior oriented to the solution of certain problems inherent in a major area of social life. The possibilities of change inherent in institutionalization arise from the fact that to create and maintain an institution, certain values and norms must be used as guidelines for behavior. Certain groups or individuals will be alienated by these values or norms either during institutionalization or as the leaders try to maintain the system over time. Which groups these will be is defined by the direction and character of institutionalization. Those groups or persons which have negative orientations toward the premises of the system are called "anti-systems." These anti-systems will vary in strength and size, and some may remain dormant for a long time. They also constitute important foci of change, under propitious conditions. Extensive use is made of examples from political and religious systems of the traditional centralized Empires.

PROMOTION OF UTILIZATION
PROGRESS REPORT

Engstrom, George A. Where we stand on research utilization. *Rehabilitation Record,* November-December, 1969, 28–32. (III, I; Research utilization specialist, Change agent, Utilization laboratory)

The Social and Rehabilitation Service has strengthened its role in promoting research utilization by the following specific methods: (a) developing two publications; one *(Research and Demonstration Briefs)* presenting digests of completed projects to serve as linking agent between practitioners and researchers, another *(Research Trends)* giving preliminary findings of projects in progress to shorten the time gap between testing and application of findings; (b) requiring all directors of SRS-funded projects to include in final reports a separate listing of significant findings; (c) abstracting all SRS final reports to include methodology, major results, and usage potential; (d) updating bibliographic and indexing tools for rehabilitation practitioners; (e) experimenting with a pilot research utilization laboratory to aid in modification of demonstration projects for a widespread adaptation; (f) providing for—on a demonstration basis—a new Research Utilization Specialist who is to serve as change agent in State rehabilitation agencies; (g) sponsoring research utilization conferences for researcher, practitioners and administrators; (h) planning demonstrations to illustrate communication through a variety of media.

PLANNING FOR CHANGE
THEORETICAL ANALYSIS

Erwin, P. H., & Langham, F. W., Jr. The change seekers. *Harvard Business Review,* January-February, 1966, 44, 81–82. (IV; Organizational change, Strategies for effecting change, Promotional diffusion, Diffusion of information, Organizational climate)

Based on experience and observations, the authors developed a logical analysis of how to plan for change in business. Findings include: (1) organizations must have attitude that change is normal; (2) any change should be approached on both logical and psychological fronts; (3) plan change far enough in advance so people affected will be able to make necessary adjustments; and (4) conflict between administrators and initiators must be expected.

ADOPTION OF INNOVATION

ANALYSIS/SUGGESTIONS

Evan, William M. Organizational lag. *Human Organization*, Spring 1966, 25, 51–53. (IV; Resistance to innovation, Technical innovation, Administrative innovation)

To understand the basis for the differential response of organizations to new ideas, the author identifies the distinction between technical and administrative innovation. Technical innovation means the implementation of an idea for a new product, process or service; administrative innovation refers to the implementation of an idea for a new policy relating to personnel recruitment, allocation of resources, structuring of tasks, of authority, of rewards. The concept of organizational lag is described as a discrepancy in the rate at which new technical and administrative ideas are implemented in an organization. Sources of resistance to technical or administrative innovations are, among others, psychological and social in character. In the sphere of formal organizations, management, especially of large organizations, appears to operate with a "trickle-down" theory of new administrative ideas and a "trickle-up" theory of new technical ideas. It is suggested that if an organization is to minimize organizational lag —and hence maximize the chances of both administrative and technical innovation—the "trickle effect" with respect to both administrative and technical ideas would probably have to operate in *both* directions.

ORGANIZATIONAL AND INSTITUTIONAL CHANGE

SURVEY/ANALYSIS

Evan, W. M., & Black, G. Innovation in business organizations: Some factors associated with success or failure of staff proposals. *Journal of Business*, 1967, 40, 519–530. (IV, II; Characteristics of innovative organizations, Opinions and attitudes concerning change, Planning for change, Organizational climate, Organizational factors involving innovation)

The authors studied a small sample of business organizations to determine factors which affect the success of proposed innovations. They found that staff proposals were more likely to be successful in organizations with high competition, high professionalism, high formalization of rules, high degree of communication between staff and line personnel, high quality standards, and high perceived need for change. Organizations with these characteristics were also more receptive to administrative proposals.

RESISTANCE TO CHANGE

CASE STUDY ANALYSIS

Evans, R. I., & Leppmann, P. K. *Resistance to innovation in higher education: A social psychological exploration focused on television and the establishment.* San Francisco: Jossey-Bass, 1968. (II, IV; Opinions and attitudes concerning change, Promotional diffusion, Adoption of innovation, Characteristics of innovative persons/organizations, Educational innovation)

In a case study exploration of the role of the university faculty in the diffusion of innovations within the university, the faculty of a metropolitan university was surveyed to ascertain attitudes toward the introduction of instructional television. The findings showed that those individuals in favor of instructional television were: (1) less conservative and tradition-oriented; (2) more inclined to favor extracurricular activities; (3) less opposed to teacher and student evaluations; (4) more tolerant and sophisticated. The authors concluded that: (1) many professors believe much training, equipment, and general reevaluation of teaching goals would be required in order to utilize instructional television; (2) the source of the institutional innovation affects the attitudes of the adopters; (3) institutions which rewarded innovative behavior had more innovative faculties; and (4) job security may be intricately involved in innovation adoption in higher education institutions.

DISSEMINATING INFORMATION

EXPERIMENTAL STUDY

Eyestone, Merle L. A comparison of the effectiveness of bulletin, film and lecture, with and without discussion, in presenting research information. *Dissertation Abstracts,* 1966, 27 (4–A), 922–923. (II; Research dissemination, Use of groups for change)

The purpose of this investigation was to determine the differences, if any, in the *effectiveness of selected media,* with and without discussion periods, in adult learning situations. The effectiveness of media and discussion techniques in presenting 4–H research findings to 4–H Club leader groups was determined by the measurement of the amount of knowledge gained, and the differences in attitude and opinion. Findings indicate: (1) There is no statistical advantage in terms of knowledge gained in choosing one particular media in presenting 4–H research findings to 4–H leader groups. (2) Participants will gain more knowledge from the subject matter if no discussion is held than if a 20-minute discussion is allowed following a presentation, irrespective of media used. (3) There is no medium for presenting research findings which is significantly superior in affecting attitude or opinion responses. (4) Of the three tested discussion techniques none is significantly superior in affecting attitude or opinion responses.

PROMOTION OF UTILIZATION

RECOMMENDATIONS

Fairweather, George W. *Methods for experimental social innovation.* New York: Wiley & Sons, 1967. (III, I; Organizational factors involving innovations, Researcher-practitioner collaboration, Disseminating information, Community cooperation, Research diffusion)

During the course of 13 years of experimental work aimed at solving the problems of several marginal groups, Fairweather developed conclusions regarding social innovations. One of the first obstacles to social innovation research in a rehabilitation setting is the traditional separation of research and service—administration commitments are necessary for the success of research efforts. Administration commitments on the basis of prestige cause problems when the time comes to back up commitments with staff, space, etc. Common misconception held by institution management is that research will bring additional services to the institution without cost to the institution. Researcher should require definite commitments from management regarding budget, space, authority, staff publication rights, etc. Researcher, in turn, must assure management of progress reports, procedures and norms. Researcher must determine if results of experiment can be generalized to society, depending upon representative sample, social context, evaluation criteria. Fairweather concludes by recommending that a number of centers for experiments and training be established in universities, industrial institutions, government agencies and private foundations to continually initiate social innovation research, establish communication systems, provide information, and help establish administration procedures.

GATHERING KNOWLEDGE
SUGGESTIONS

Felix, R. H., & Clausen, R. A. The role of surveys in advancing the knowledge in the field of mental health. *Public Opinion Quarterly,* 1953, 17 (1), 62–70. (III, I; Research needed in mental health care, Researcher-practitioner gap, Mental health care innovation)

The author outlines various kinds of *research needed in the area of mental health care.* Research on the *actions* of individuals regarding their own or other's mental health is needed: who recognized the illness and why, and what methods brought the patient into treatment. "Folklore" responses to mental illness, such as turning to clergymen for counseling, should be aided by assisting clergymen to be better counselors, rather than fought by urging people to see psychiatrists. Information is needed on the effectiveness of mass media for transmitting public health information, although you are more likely to change information levels than attitudes. Sophisticated research is needed in areas such as drug addiction, child-rearing, services for older people, morbidity studies, and studies of families where mental illness has occurred. Characteristics of individuals and families who succeed at coping with serious problems should be studied in order to provide suggestions for strengthening such characteristics.

COMMUNITY COOPERATION
CASE STUDY ANALYSIS

Feller, D. Adult education in program implementation. *Adult Leadership,* May 1965, 14, 11–12. (II; Strategies for effecting change, Strategies for overcoming resistance to change)

In Los Angeles a group of lay volunteers was successfully used to aid in the selection and screening of prospective foster parents. An orientation course was given to individuals who became chairmen of Foster Home Finding Committees. The main drive of the program was to educate the community to the need for foster homes. When this brought little response the material was reexamined. New programs were then introduced which presented a more personal image of the foster parent and child; subsequently, community response grew.

MIDDLEMAN ROLE
THEORETICAL ANALYSIS

Ferguson, Charles J. Concerning the nature of human systems and the consultant's role. *Journal of Applied Behavioral Science,* 1968, 4 (2), 179–193. (III, IV; Organizational climate, Organizational factors involving innovation, Research-practitioner collaboration, Research diffusion, Promotional diffusion, Diffusion of information)

In this analysis the consultant role is conceptualized in a systems framework, and processes that the consultant uses to help the client system externalize disruptive tendencies are described. Consultants' focus is the management of relationships, determining how collaborative efforts among subparts can be evoked, or tensions reduced. A number of activities of the consultant are identified, among them: (1) capture data; (2) scan for troubled interfaces; (3) promote psychological bonding (4) serve as communications conveyor; (5) encourage feedback; (6) assist in management of conflicts, and (7) promote a proper psychological climate.

INFORMATION RETRIEVAL
SURVEY

Ferguson, J., & Lazarsfeld, P. F. Social science information services: Progress report on a survey. *American Behavioral Scientist,* June 1964, 7, 20–22. (I; Knowledge dissemination, Information gathering, Knowledge selecting, Utilizing information)

As social science information and research has increased and as specialization without centralization of information has occurred, retrieval of relevant published and unpublished material has become a problem. To aid retrieval of this material, the Bureau of Applied Social Research, Columbia University, conducted a survey of 4,300 social scientific institutions, organizations and agencies to determine which would have information available for the public. Selections taken from the returned questionnaires were compiled into a social science directory of information services. Information services were found to be very heterogeneous. One classification separated the initiators of research, e.g., specialized libraries and dissemination services. These organizations have been developing independently of each other. Much unpublished material is therefore not disseminated widely, as research organizations usually do not maintain large information services.

OPINIONS AND ATTITUDES IN CHANGE

REVIEW

Festinger, Leon. Behavioral support for opinion change. *Public Opinion Quarterly,* 1964, 28 (3), 404–417. (II; Characteristics of persons in change, Process of change, Response to innovation, Rejection of innovation)

The assumption that there is a *relationship between attitude change and subsequent behavior* has not been proved. Three relevant studies that have been made indicate that this relationship does not exist. There have been studies that show that existing attitudes relate to overt behavior, but not whether attitude change brought about by exposure to a persuasive communication will cause a concommitant change in subsequent behavior. A possible conclusion is that when opinions or attitudes are changed through the momentary impact of a persuasive communication, this change might be inherently unstable and will disappear or remain isolated unless an environmental or behavioral change can be brought about to support and maintain it. The author hypothesizes that in order to produce a stable behavior change following opinion change, an environmental change must also be produced which, representing reality, will support the new opinion and the new behavior. Otherwise, the same factors that produced the initial opinion and the behavior will continue to operate to nullify the effect of the opinion change.

PROMOTION OF UTILIZATION

CASE STUDY ANALYSIS

Flanagan, John C. Case studies on the utilization of behavioral science research. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science, Vol. 1.* Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 36–46. (III, II, IV; Adoption of innovation, Evaluation of innovation, Response to innovation, Organizational factors involving innovation, Strategies for effecting change)

Two case studies, both related to the development of new evaluation procedures for the client organization, differed markedly in the extent to which the results have been utilized. Both projects used (1) research based on data from actual field operations, (2) procedures which were developed and tried out under field conditions, (3) those responsible for ultimate decisions active in the planning stages, and (4) projects not beyond state of the art. The conditions existing in the extensively utilized project *only* were: (1) requirements of the study originated with the utilizors of the findings; (2) top management was sensitive to the need for improvements; (3) ultimate users took part in collecting and evaluating data; (4) ultimate users perceived the change as resulting in definite personal benefits to them, and (5) potential benefits were tangible.

RESISTANCE TO CHANGE
ANALYSIS

Fliegel, Frederick C. Obstacles to change for the low income farmer. *Rural Sociology*, 1960, 25, 347–351. (II; Attitudinal change, Value change, Barriers to change)

From a study of farm operators, data was analyzed from the low income sample who were under 60 years old. The mean age of this group was 46, as compared with a mean age of 41 for the high income group, and in general they tended to have less education. The hypotheses: (1) lower income farmers "will tend to be oriented to the present rather than the future," (2) "will tend to be passive with respect to the problems of mastering their environment" in areas such as credit and use of modern farming information and practices. Developing a commercial approach toward farming seems to necessitate basic attitudinal and value changes, and the study reveals there is little evidence the respondents want change or could easily change. If these changes are not made, the author suggests subsistence farming as a possible outcome. Those people with higher income and supposedly with different attitudes and values may profit from education programs geared more directly to commercial agriculture.

ADOPTION OF INNOVATIONS
INTERVIEWS

Fliegel, F. C., & Kivlin, J. E. Attributes of innovations as factors in diffusion. *American Journal of Sociology*, 1966, 72 (3), 235–248. (II; Characteristics of innovative persons, Introducing innovation, Response to innovation, Technological innovation, Promotion of utilization)

A large group of farmers was interviewed in order to identify a specific set of attributes of farm innovations and to explore the extent to which these attributes accounted for differences in the rate of adoption of innovations in modern farm practices. Investigators found that the following attributes of innovations *did* affect the rate of adoption: (1) high continuing costs; (2) rapid recovery of costs; (3) payoff; (4) saving of work time; (5) regularity of reward; (6) divisibility of trial; and (7) association with dairying. The following attributes did not significantly affect adoption rates: (1) initial costs; (2) social approval; (3) relief from odious tasks; (4) perceived complexity of innovations; (5) clarity of results; (6) compatibility between the innovation and traditional methods; (7) mechanical attraction, and (8) pervasiveness.

PLANNING FOR CHANGE
PILOT STUDY/ANALYSIS

Forstenzer, H. M., & Hunt, R. C. The New York State community mental services act: Its origins and first four years of development. *Psychiatric Quarterly Supplement*, 1958, 32, 41–67. (IV, II; Processes of innovation, Evaluation of innovation, Mental health innovation)

This paper has described the origins, principles, provisions and early development of the first attempt in the United States to establish a *comprehensive community mental health program for an entire State.* Widespread citizen readiness for the coordinated and integrated planning of mental health services has been demonstrated, as has local and State government willingness to finance large-scale programs. This has focused attention on the need for developing methods of evaluating the effectiveness of services for more research, especially into the causes of mental illnesses; on the need for training professional personnel, and on the need for the development of a public health approach to mental illness and mental health.

COMMUNICATION

EXPERIMENTAL STUDY

Forster, Jerald. An investigation of the effects of two feedback methods when communicating psychological information. *Dissertation Abstracts*, 1967, 27 (8–A), 2390–2391. (II; Opinions and attitudes concerning change)

The purpose of this investigation was to explore the relative effects of two different methods of communicating mental ability test results. Individuals at several different levels of ability and achievement were included. Emotional and cognitive reactions accompanying different types of test interpretations were investigated by assigning subjects to one of two treatments: a self-explanatory, branching-type of programmed booklet devised by the investigator; and verbal communication by one of four professional counselors during individual interviews. Two unrelated dependent variables, emotional reactions and cognitive changes, were included to evaluate the effects of the methods of communication. Statistically significant differences between the two methods of test interpretation were detected in the rate of decline in subject's electrodermal skin conductance (SC) readings. With the exception of the overachievers, the subjects who received tests results from counselors appeared to relax at a more rapid rate than subjects who received test results from the programmed manual. However, subjects getting results from the *programmed materials* improved significantly more in the accuracy of their self-estimates as the results of the test interpretation. There was little or no evidence that individuals with low test scores experienced greater emotional reaction during test interpretation than did individuals with high or medium scores. The results suggest that counselors have the effect of calming down their clients in a threatening situation, although counselors fail to communicate factual information as accurately as it can be communicated by written materials organized in a programmed format. Expansion of the use of programmed materials for the communication of test results was recommended.

ADOPTION OF INNOVATION

EXPERIMENTAL STUDY

Fosen, Robert H. *Social solidarity and differential adoption of a recommended agriculture practice.* (Doctoral dissertation, Cornell University) Ann Arbor, Mich.: University Microfilms, 1956. No. 56–2385. (II, III; Characteristics of innovative persons, Social factors influencing innovation, Opinions and attitudes concerning change)

The purpose of this study was to explain why many New York State dairy farmers who would benefit most by the adoption of recommended agricultural practices do not adopt them even after their utility has been demonstrated. An interviewing schedule was administered during the fall of 1955 to dairy farmers in Herkimer County, New York. Data were interpreted with respect to adoption of the recommended practice of artificially inseminating dairy cattle. Findings indicated that farmers who adopt recommended practices tend to be persons who: (1) belong to an informal social group of other farmers; (2) associate more with others of the group who have adopted new practices than with others of the group who have not adopted new practices; (3) appear to follow the farming standards set by the group to which they belong and by the persons with whom they associate. The farmer who adopts practices tends to be an "outward oriented" and conforming member of a group, while the farmer who does not adopt practices tends to be a social isolate conforming to standards that have their source in traditional values. These informal social groups that influence the decisions of their members contain individuals who tend to be similar in the extent of their formal social participation, age, and in the size of their farming operations. The results of the present research support the over-all conclusion that adoption of recommended agricultural practices is, to a meaningful extent, a function of the informal social organization of the rural community.

STRATEGIES FOR CHANGE
THEORETICAL ANALYSIS

Foshay, Arthur W. Strategies for curriculum change. In National Vocational Guidance Association, *A report of the invitation conference on implementing career development theory and research through the curriculum.* Washington, D.C.: The Association, 1966. Pp. 1–16. (II; Educational innovation, Curriculum change, Planning for change, Change process)

In the past, when school systems have undertaken change, they have not taken all aspects of the process into account and, as a result, had little success. The strategy for change, according to Miles, must consider: Design of the Innovation, Local Awareness and Interest, Local Evaluation, and Local Trial. This plan neither rules out the "democratic," "political" or "county agent" methods of introducing change which are currently used, nor relies on any one completely. Instead it combines each for a comprehensive approach. Regarding curriculum change specifically, the author defines three criteria for including any given subject in a curriculum. First is the transferability, or generalizability of the subject. The more specialized or esoteric the knowledge, the less likely it is to be adopted. Second, the knowledge should appear to be a part of a theory of general education (i.e., it is personally enhancing, or intellectually invigorating). Third, it must be pedagogically feasible. Also, the system must be entered from several points to succeed, rather than attaching just one, or perhaps two. Some key entry points are the hierarchy, the supporting community, the instruction materials, the teachers and the students. Finally, the professional education of teachers must be developed and improved before all other things, for it is the teachers who occupy a most crucial spot in the system. College teacher training has been shown to influence a teacher's methods throughout her career, yet that training has been shown to be less than satisfactory.

RESEARCH-PRACTITIONER RELATIONSHIP
SUGGESTIONS

Foster, George. Public health and behavioral science: The problems of teamwork. *American Journal of Public Health,* 1961, 51, 1290. (III; Linkage factors involving innovation, Research-practitioner collaboration)

The behavioral scientists have learned much concerning beliefs about illness and health practices that can be of use to the health professions. For a team of behavioral scientists and health professionals to work effectively there must be agreement on implications of goals, importance of the problem, and understanding of each others' philosophies. There are differences between the two fields; the scientist is not concerned with value judgments, the professional is, and the scientist finds gratification from making a scientific contribution, the professional from raising the health level. Care should be taken in selecting personnel for a team to insure their suitability for this form of collaboration. The problems in the public health field that are best suited to behavioral science research are those which have an immediate, tangible, and personal target. The health profession tries to direct change, and the behavioral sciences can give aid by studying both the innovating body and the client society.

EDUCATIONAL INNOVATION
EXPERIMENTAL STUDY

Fox, R. S., & Lippitt, R. The innovation of classroom mental health practices. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 271–299. (IV, II; Adoption of innovation, Characteristics of innovative organizations, Introducing innovation, Strategies for effecting change, Promotional diffusion, Use of groups for change)

This experimental study, carried out at the University of Michigan, hypothesized that teachers might be encouraged to make changes in their classrooms either by: (1) collaborating with the research team in gathering and interpreting data about the teacher's classroom, or (2) examining the innovative efforts of other teachers in meeting situations similar to ones existing in the teacher's class. The authors found that: (1) those teachers who participated in intensive workshops became the most highly innovative; (2) innovative efforts of teachers can be highly useful to colleagues, however, poor channels of communication hinder such sharing; (3) reeducation efforts had to overcome the attitude that using someone else's innovation is a better value than creating one's own; and (4) innovative efforts by teachers are more likely to succeed with the supports of administration, professional colleagues, and outside resource people.

EDUCATIONAL INNOVATION
CASE STUDY

Fox, R. S., & Van Egmond, E. E. Trying out new ideas. *National Education Association Journal*, October 1962, 51, 25–27. (II; Change process, Barriers to change, Strategies for change, Introducing innovation)

This article describes a case study of a teacher who tried out an innovation in her classroom. It illustrates the many supporting and restraining forces present in the educational environment, and which of these will cause, alternately, frustration or success. The main factor to emerge in successful instances was the teacher's use of resources outside the classroom to achieve her goals. This overcame the restraining factors of fear of criticism, inability to deal with certain strategies and techniques and anxiety over the principal's reactions to her performance. An ability to see the change process as involving failure as well as success and therefore being able to deal more realistically with delay, frustration and failure, was emphasized.

DIFFUSING OF INFORMATION
DESCRIPTION

Fox, Theodore. Crisis in communication and the functions and future of medical journals. *American Journal of Orthopsychiatry*, 1967, 37 (3), 507–520. (III; Research-practitioner gap, Research diffusion/dissemination, Gathering and classifying information, Utilizing information/knowledge)

Discussion and solutions on the future of medical journals are outlined in terms of the medical investigator's needs. Information indexing and retrieval is mentioned in connection with obtaining sources for documented articles within the time limit required by researchers. It is questioned whether increased activity in providing more research funds, better indexes, and more clever librarians might not encourage more authors to produce more work while at the same time not guaranteeing that the quality of the reports will be improved. While it would seem that the twilight of the printed word is approaching, a radical solution is proposed to select, to establish priorities, and to report rapidly and interchange information by providing demand-type publications requested from advance index, abstract and micro-card dissemination, rather than by the present printed journal method. A well indexed list of newly reported facts would be most valuable to medical researchers. The library of tomorrow will be a communications center, not a repository; and it is believed that anything good will always survive, even if it has to be exhumed.

BARRIERS TO UTILIZATION
ANALYSIS

Frank, Lawrence K. Fragmentation in the helping professions. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 44–48. (I; Integration of knowledge, Resistance to change)

The author draws attention to the barriers raised by the increasing tendency to specialize, and points out that there is a lack of integration of knowledge from the various sciences and social sciences. It is the author's view that individuals tend to draw only from their field of "specialization" when looking for solutions to problems. In addition, each specialist, confident of his own knowledge and techniques tends to ignore the far-reaching implications of his findings. Fragmentation in both science and practice is viewed as another barrier to the free flow of information and utilization implementation.

COMMUNICATION
SUGGESTIONS

Frank, Lawrence K. Interprofessional communication. *American Journal of Public Health,* 1961, 51, 1798–1804. (III, I; Collaborative communication, Use of groups for change, Linkage)

A message which a sender feels is properly coded may receive a different interpretation because of nonverbal messages, specialized languages, and for various conceptual frameworks. Problems that are multidimensional are approached in an unidimensional manner, using the specialized focus, methods, and conceptions of one discipline. Each member of a team should strive to communicate with others who do not share his training in a particular field; all members should initially give a statement of their concepts and unformulated assumptions. In order that the members of a team do not feel that they have to give up their disciplinary positions, we should speak of *multidisciplinary or multiprofessional approaches* and not interdisciplinary or interprofessional projects. A well run team should function like a well run orchestra with each member accepting the common task and being given complete autonomy.

MODELS FOR CHANGE
THEORETICAL ANALYSIS

Gallaher, Art, Jr. Directed change in formal organizations: The school system. In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1965. Pp. 37–51. (IV; Change agents, Organizational change, Planning of change, Process of change)

Taking the viewpoint of an anthropologist, stressing the role of advocate, and examining the organizational peculiarities of school systems, the author explores directed change. The two role models for advocacy are the pragmatic, which uses the advocate's knowledge of the organization to create a climate for change, and the Utopic, which uses manipulation of people by the advocate, rather than working with people. The author favors the pragmatic model for achieving change. Variables necessary for the success of directed change: (a) the perceived prestige of the advocate by target system members; (b) the dependence upon authority by target system members; (c) the shared expectation of change by target system members; (d) the felt need for change by target system members; (e) the time factor; and (f) the size and divisibility of the target system. The school system is a service organization and the client group determines the limits, kinds of authority and goals that the organization will develop. The professional functionaries in a service organization must retain the authority of the client group, yet not become subservient to their demands. Because the school administrator must perform a "balancing role" between the client group and the professional in the school system, he should not assume the role of advocate. The author suggests a special role for the advocate of education change.

PLANNING FOR CHANGE

SYNTHESIS

Gange, J. The role of private philanthropy in the dissemination and implementation of educational research. In K. Goldhammer & S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962. (III; Educational change, Research-practitioner gap, Disseminating information, Strategies for funding agencies)

Directional education research studies the content or purpose of education, rather than methodologies, facilities, etc., (procedural research). Private philanthropy will probably be needed to fund this research, which must begin with a severely critical analysis of present confusion and then decide on what kind of society we should become. The author reports a discussion of whether social reflection is a function of the schools and if research can answer questions on goals and values. The effectiveness of private funding agencies as disseminators and implementors is also debated.

PLANNING FOR CHANGE

EXHORTATION

Gardner, John W. What kind of society do we want? *Reader's Digest,* September 1969, 74–78. (IV, II; Use of groups for change)

The aging of institutions (specifically governmental institutions) should be studied and methods that provide for their continuous renewal should be found. "Reformers" tend to be preoccupied with specific evils when their true task is to design a society (and institutions) capable of continuous change, renewal, and responsiveness. Such a society should be characterized by pluralism: alternatives that allow "freedom of choice" to be meaningful. Individuals should be served by institutions, not made specialists incapable of autonomous functioning. If nobody rocks the boat, it will probably sink, at least if the "boat" is a "self-governing" society. The full development of human resource through life-long education and self-discovery is essential. Institutions must allow individual participation. Local government is a prime target for revitalization. Organizational features which diminish or strengthen individuals should be identified. The natural resources and beauty of this land must be preserved. The need for individuals to be needed and to provide service to others should be tapped to make life and individual freedom more meaningful. We and our institutions must learn to be faithful to our professed ideals of justice, liberty, equality, and individual worth, dignity, and responsibility. Uncommitted but powerful Americans must hear and heed a call to action to reshape institutions. "We the people of the United States" must act. No one will act for us. We *can* design a unified society capable of continuous renewal.

DISSEMINATING INFORMATION

CASE STUDY ANALYSIS

Garvey, W. D., & Griffith, B. C. Communication in a science: The system and its modification. In A. de Reuck & J. Knight (Eds.), *Communication in science: Documentation and automation.* A Ciba Foundation volume. Boston: Little, Brown, 1967. Pp. 16–36. (II; Research dissemination, Adoption of innovation, Introducing innovation)

In the scientific communication system studied, the pattern of information flow was found to be: interchange with small groups of colleagues, formal reports at regional or national conventions, distribution of copies of reports, submission of manuscripts to journal, preprints of journal articles, journal publication, reprints of journal articles, appearance in *Psychological Abstracts*, and, finally, inclusion in review of current work. The research scientist actively seeks an exchange of information; because the goal of publication in a journal is limited, there is an orderly development of informal channels. Because members of the scientific community are both users and disseminators of information, there is continuous feedback within this closed social system. The system is dynamic; if new elements are needed they are developed. Planned innovations should move the entire system in the desired direction whether directly or indirectly; should be measured in behavioral and economic terms; should include mechanisms that will modify or terminate the innovations if necessary; and should promote a combination of informal and formal channels of information. Three innovations were introduced into the communication system studied: reduction of the time-lag before an item appeared in *Psychological Abstracts;* inducement of long-lag journals to publish listings of manuscripts, to reduce the time when the information was unavailable; and advanced publication of papers which were to be presented at the national convention, as a stimulus to increase interaction at the convention. After studying the results of the planned innovations, it was found that most of the desired benefits were derived.

PROMOTION OF UTILIZATION
PROGRESS REPORT

Garvey, W. D., & Griffith, B. C. Research frontier: The APA Project on Scientific Information Exchange in Psychology. *Journal of Counseling Psychology*, 1963, 10, 297–302. (I, III; Diffusing information, Utilizing knowledge, Research diffusion)

The authors discuss a National Science Foundation study analyzing scientific communication and information exchange. Channels of communication in psychology, such as journals and conventions, have been studied. The project first identifies the persons and institutions playing information exchange roles and then determines the scope of the activity. Sixteen studies done to date are described. (1) Information exchange and use in a two-week period are assessed through diaries of APA members. (2) Information exchange and use relative to scientific product with an emphasis on informal communication were studied. (3) Information exchange between foreign and American psychological organizations and information exchange among their members were studied. (5) Production, distribution and use of technical reports were analyzed. (6) General characteristics of APA conventions and of participants in conventions for the years 1936–1961 were examined. (7) Convention attendants and their use of the convention as a source of scientific information were studied. (8) Convention participants and their functions in the dissemination of information at scientific meetings were analyzed. (9) Scientific information exchange activity at meetings of State psychological associations was examined. (10) Journal publication fate of presentations made at the 1957 APA convention was surveyed. (11) Comparisons were made of sources of published scientific information in *Annual Review of Psychology* and *Psychological Abstracts.* (12) Journal users were asked to relate their use to their activities and to estimate the use of information obtained through journals. (13) Article authors were polled on processes leading to the finished article. (14) Reciprocity in bibliographical citations was explored. (15) The connotative images of various journals were studied by polling members of the profession. (16) Processes of reviewers (writing for *Annual Review of Psychology*) were investigated.

DISSEMINATING KNOWLEDGE

THEORETICAL ANALYSIS/SUGGESTIONS

Garvey, W. D., & Griffith, B. C. Scientific communication: The dissemination system in psychology and theoretical framework for planning innovations. *American Psychologist,* February 1965, 20 (2), 157–164. (I, III; Research communication, Innovation in dissemination and communication, Process of dissemination)

The authors present a description of the channels of communication in psychology, possible innovations and a theoretical framework for the study of innovation. Some of the shortcomings of the existing dissemination system are: time lag in publication; limited availability to the scientific community; discrepancy between effort and actual use of journal publication; redundancy and the limited effectiveness of the national convention. The basic determinants of the dissemination system are described. A proposed innovation is to publish convention proceedings prior to the convention. The predicted effects of this are: elimination of abstracts and copies of convention presentations; less use of informal channels between writing and publication time; more intensive communication between researchers in the same area; disturbance of the assumption that full journal publication is the normal outlet for research findings. Innovations are regarded as experiments with the necessity of measuring their effect on the existing system, the information behavior of scientists and the conduct of scientific work.

COMMUNICATION

CASE STUDY ANALYSIS

Garvey, W. D., & Griffith, B. C. Scientific information exchange in psychology. *Science,* 1964, 146 (3652), 1655–1659. (I; Research dissemination, Disseminating information)

The scientist seems to have two motives which help shape and modify the system of communications in the field of psychology. Motives are to obtain information and to publish findings. The interchange of information starts well before it finally appears as a journal article. Information is first exchanged with local colleagues, in special group meetings, through conventions and convention publications before and after the convention, and finally through preprints of journal articles. The journal article appears, reappears in reprints, and is picked up by abstracts and in reviews of current information. Often the readership of an article in a journal is already familiar with the contents from earlier sources of information. The motives of the scientist, along with the operations of the system, create an unstable process; if the motives are not satisfied new means are found. To date much of the work on information retrieval has centered around the published journal; more attention should be given to the informal means of communication which may include audiences as large as those reading journal articles. The national convention holds a key position in the informal exchange of information both because it occurs early in the development of a report or an article and because it is the least restricted of the private forms of dissemination.

RESEARCH DISSEMINATION

EXPERIMENTAL STUDY

Garvey, W. D., & Griffith, B. C. Studies of social innovations in scientific communication in psychology. *American Psychologist,* 1966, 21 (11), 1019–1036. (I; Introducing innovation, Promotion of utilization)

Two innovations were introduced within the communication system in the science of psychology. The innovations were introduced taking these factors into consideration: understanding the existing system of communication, facilitating the movement of the entire system in the desired direction, using both the formal and informal system of communication, and introducing the innovation as an experiment that can be either altered or terminated. One innovation was the listing of the names and addresses of authors of manuscripts shortly after they were accepted for publication in long-lag core journals. This did have the desired effect of making research information more accessible at an earlier time. The other innovation, preconvention publication of convention presentations, also had the desired effects of a rapid dissemination of research findings and greater interaction between attendants and authors at the convention.

RESEARCH-PRACTITIONER RELATIONSHIP

SUGGESTIONS

Gelfand, S., & Kelly, J. G. The psychologist in community mental health: Scientist and professional. *American Psychologist*, 1960, 15, 223–226. (III; Mental health innovation)

The authors' purpose in this article is to discuss further the role of the psychologist in community mental health and to offer several recommendations for the future training of psychologists in this field. Community mental health offers opportunity and challenge which psychologists can find stimulating and rewarding. First, the concepts of prevention and mental health may be a welcome relief to psychologists who have been using traditional treatment methods on the already-sick. Second, attention to relationships between community variables and personality development, as contrasted with a primary concern for intrapsychic factors, can be more intellectually stimulating in its broader perspectives. It is suggested that the role which offers the greatest possibility for maintaining identity is that of the scientist-professional. Leadership by the *scientist-professional psychologist* can help to redirect the mental health field to a health orientation and away from the pathology perspectives in which it is anchored. Postdoctoral training of the scientist-professional in the university setting must include these characteristics: (1) intimate ties with community field agencies, (2) an academic change to an interdepartmental focus to acquaint psychologists with contributions of sociologists, anthropologists and public health personnel.

ORGANIZATIONAL CHANGE

THEORETICAL ANALYSIS

Gill, P. P., & Bennis, W. G. Science and management: Two cultures? *Journal of Applied Behavioral Science*, 1968, 4, 75–124. (IV; Resistance to change, Linkage in organizations, Attitudes concerning change)

This study is an attempt to determine whether significant differences exist between behavioral scientists and manager-practitioners, and what might be the order of magnitude of such differences. A group of behavioral scientists and a group of industrial managers were solicited for reactions to a few concrete human behavior problems. Two theories of influence can be clearly discerned. The behavioral scientist holds to a view of the world characterized by a process of mutual influence. Practitioners perceive influence and change as being receptive only to the power of legitimate authority. The scientists hold that Theory Y (or participative management) is necessary if an organization is to perform effectively and responsibly. The behavioral scientists—far more than the practitioners—embraced a systems approach to the problems they confronted; they identified more causes and they more often recognized the interrelationships of causes and responses—a part of an integrated whole. Responses of both groups suggested a common hypothesis about individuals and groups. It is that an explicit or implicit assumption to the effect that individual and organizational goals are incompatible seems to fulfill the needs of neither.

CHARACTERISTICS OF INNOVATIVE PERSONS

THEORETICAL ANALYSIS

Glaser, Barney G. Differential association and the institutional motivation of scientists. *Administrative Science Quarterly*, 1965, 10 (1), 82–97. (I, II; Barriers to utilization)

A scientist's background experience can be used to assess his potential productivity as well as his potential research competence. Productivity is divided into two categories, institutional motivation and firmness. Motivation to advance knowledge varies according to how strongly colleagues in his training and work experience emphasize this goal. The duration of these relationships beyond a year does not matter, but there is a positive correlation with the diversity of scope of a scientist's colleagues. Motivation to advance knowledge will not be diminished by working for a time with people interested in applying knowledge. Firmness of motivation (ability to keep motivation at a high peak) varies positively with the diverse scope of his colleagual relationships during his induction into alternate methods of being "rewarded" when not receiving recognition for advancing knowledge. For scientists with little diversity of colleagues, motivation has never developed enough to be increased or decreased by variations in recognition.

ORGANIZATIONAL CHANGE

ANALYSIS

Glaser, Edward M. Consultation to enhance job satisfaction and productivity in an organization. *Newsletter*, Division 13, Consulting Psychology, American Psychological Association, 1969, 22 (3), 11–13. (II, IV; Strategies for effecting change, Change agent, Process of change)

Productivity was increased and grievances, turnover, and absenteeism were decreased after a consultant was able to aid in the change of a task-involved group to an ego-involved task group within the Medical Specialties Company. Some of the factors which helped bring this change about were: leadership which invited and made safe for the group a nondefensive, autocritical, self-challenging review of the group's performance; positive reinforcement for admitting problems; respectful consideration of all suggestions and ideas; and true participation by each member in the development of methods to achieve results. Resulting changes brought about an environment which was more humanly satisfying for the workers.

PROMOTION OF UTILIZATION

RECOMMENDATIONS

Glaser, Edward M. Facilitating the use of validated knowledge. Paper presented at American Orthopsychiatric Association meeting, San Francisco, Calif., March 1970. (I, III; Barriers to utilization, Research-practitioner collaboration, Research diffusion)

The paper addresses itself to the lag between the development of significant research findings and their cross-validation, dissemination and ultimate utilization. It points out that most potential users of new findings lack motivation, knowledge, and power to find out about innovations in their fields, evaluate them, and try them out. Intensive and supportive joint action is advocated between researcher and funding agency to clear the path for effective end-product utilization, and a number of specific strategies are advanced. To make sure that these facilitation strategies reach a receptive audience among potential users, it is crucial that these users function in a nondefensive organization climate in which existing practices can be examined critically and change can be approached as challenge rather than threat. Case material from an ongoing demonstration project is presented to illustrate how research utilization can be promoted by strengthening the loop of people-print-demonstration-people-funds through a collaborative partnership among funding agency, researchers, linking agents, administrators and potential users.

ORGANIZATIONAL CHANGE
ANALYSIS/SUGGESTIONS

Glaser, Edward M. Organizational arteriosclerosis: Its diagnosis and treatment. *Advanced Management Journal,* 1965, 30 (1), 21–28. (IV, II; Resistance to change, Strategies for effecting change, Change agent, Use of groups for change)

An organization may develop arteriosclerosis of its channels of communication. Some of the symptoms of this disorder are obsessive bureaucracy, overcentralization of control, deficient leadership skills, "fire-fighting" crises instead of planned "fire-prevention," defensive response to challenge, and lack of organizational integration. These symptoms may be brought about by increased age, size, complexity or inadequate feedback. A consulting psychologist may be able to serve as a "change catalyst" to the organization. He can aid the organization to better understand and to resolve its problems. In order to do this, the consultant should work closely with the top man, invite involvement of other appropriate persons, and help set up a system of communication to counteract grapevine distortions and to feed back suggestions. Points are illustrated in a case summary.

PROMOTION OF UTILIZATION
FEASIBILITY STUDY

Glaser, Edward M. *A pilot study to determine the feasibility of promoting the use of a systematized care program for patients with chronic obstructive pulmonary disease.* Los Angeles: Human Interaction Research Institute, Final Report to Social and Rehabilitation Service, Department of Health, Education, and Welfare, Project RD–2571–G–67, July 1968. (1, II, III; Validation research)

In recent years, exercise programs, included as part of a systematized care program, show promise of significant help to patients with chronic obstructive pulmonary disease (COPD). However, despite many publications in literature citing evidence of potential value, these exercises in conjunction with appropriate treatment are not widely used. This study attempts to identify current (1968) programs, methods and facilities used throughout the country for diagnosis, treatment, management and rehabilitation of COPD patients; compares and systematizes care modalities which appear to require further study and cross validation; attempts to develop strategies for further research into important unresolved questions in connection with diagnosis and treatment of COPD. An important aspect of this study was its service as a catalytic agent in bringing together in conference a valuable interdisciplinary network of health professions concerned with diagnosis, treatment, management and rehabilitation of COPD patients in an attempt to arrive at consensus of an optimal effective and applicable diagnostic, treatment and rehabilitation schema incorporating the best features of existing programs. In addition, the study reports a number of deterrents to the utilization of recommended systematized care programs, e.g., unresolved questions, practical considerations, and attitudinal considerations.

ADOPTION OF INNOVATION

PILOT STUDY

Glaser, Edward, et al. *Utilization of applicable research and demonstration results.* Washington, D.C.: Final Report to Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Project RD-1263-G, 1966. IV, I, II; Barriers to utilization, Promotion of utilization, Strategies for adoption, Information dissemination)

Factors which impede and those which facilitate innovation in vocational rehabilitation are focus of this report. Innovation does not spread automatically; there are barriers both in process of communication and in attitudes of people and organizations considered to be potential users. Tacoma Goodwill Industries had earlier demonstrated a relatively effective program rehabilitating severely retarded young adults to the level of sustained employment. Adoption and/or adaption of this program, it is theorized, might be stimulated through new techniques of disseminating information about project to potential users, and by offering psychological consultation to management staff of potential user agencies. Five sheltered workshops perceived as users of program with five comparable workshops serving as controls, were tested with several information techniques: (1) brief, readable booklet describing project; (2) conference enabling interaction of views and experiences related to project; (3) experienced spokesman of demonstration project sent to provide on-site consultation and, (4) psychological consultation to management staff of potential user agencies. Findings indicate chances of impact are increased if reported in brief, readable non-technical form and widely distributed, but impact is greatest where interest has already been established; innovation adoption is enhanced when potential users attend conference discussing and seeing it in operation; psychological consultation to management helped those organizations change more rapidly than the control group. Strategies for adoption of innovation in vocational rehabilitation include these suggestions: invite potential users to participate in planning of project, ask innovators of successful projects to meet with others in same or related fields through regional or national meetings; tandem teams of rehabilitation expert and psychological consultation to management might serve as change agents in vocational rehabilitation field.

PROMOTION OF UTILIZATION

REVIEW

Glaser, Edward M., & Marks, John B. Putting research to work. *Rehabilitation Record,* 1966, 7 (6), 6-10. (III, I; Research-practitioner gap, Characteristics of innovative organizations, Communication diffusion, Barriers to communication, Resistance to change, Organizational change, Barriers to utilization, Promotion of utilization)

The discrepancy between what is known and what is effectively put to use in various fields of human endeavor is discussed. The cause of the discrepancy is investigated, and a means of reducing the lag, making use of both inter- and intra-organizational innovations, is suggested. Using the Tacoma Goodwill Industries evaluation and training center for educable mentally retarded subjects as a model, three factors are presented which are essential in order for an organization to accept innovations: (1) prosperity, (2) imaginative leadership, and (3) administrative willingness to give the leaders freedom and support. Innovation is facilitated if communication flows easily and smoothly. Factors which impede communication are unreadable and unread, reports not reaching key figures, and a lack of use of person-to-person transmission of information. Organizational and personal resistances to change include fear of new work relationships, inflexibility of goals, faulty organizational self-image, and faulty organizational pride. Two ways to reduce the lag—the use of informal person-to-person communication and the use of psychological consultation—are demonstrated experimentally to yield positive results. A nine-point strategy for innovation is described incorporating the above points.

PROMOTION OF UTILIZATION
EXPERIMENTAL STUDY/ANALYSIS

Glaser, E. M., & Ross, H. L. *Increasing the utilization of applied research results.* Final Report to National Institute of Mental Health, Grant No. 5 R12–MH–09250–02. Los Angeles, Calif.: Human Interaction Research Institute, 1971. (II, III; Disseminating information, Adoption and adaptation of innovation, Organizational change, Organizational climate for change)

The study investigates organizational deterrents to change; tests various strategies aimed to overcome resistance; studies many dimensions of organizational climate with regard to change, with focus on mental health service-delivery agencies. Dissemination strategies were applied to Saturation Group Therapy (SGT), an innovational treatment format providing prolonged series of weekend group treatment sessions. Strategies included descriptive pamphlet (which stimulated intellectual interest among potential users); consultation visit by SGT director (which clarified issues but did not dispel doubts concerning feasibility); site visit and conference (which did more to create advocacy for SGT than any other strategy); post-site visit consultation (which served as a booster but did not further promote adoption). Since actual adoption of innovation was low despite above dissemination efforts, investigators sought reasons for this by analyzing characteristics of innovation and of target agencies. Innovation was assessed as being ideologically incompatible to most target agencies; having limited relevance, relative advantage and credibility; and presenting problems with regard to complexity, reversibility, divisibility, trialability. Target agencies were not uniformly receptive to change, those most resistant being those most strongly centralized, unaware of agency mission, engaged in staff/administration power struggle, rigidly committed to orthodoxy. Investigators recommend that organizational capacity for change can be augmented if it periodically reviews agency mission, assesses program effectiveness; provides knowledge to staff concerning alternative practices; provides opportunity for advocacy, means for making decision and sustaining commitment; and has control over sufficient resources. Recommendation is advanced that in future efforts to promote utilization, more careful screening be carried out of innovation to be disseminated and of target agencies to be recipients of these efforts.

PROMOTION OF UTILIZATION
SURVEY

Glaser, E. M., & Taylor, S. *Factors influencing the success of applied research.* Washington, D.C.: National Institute of Mental Health, Department of Health, Education, and Welfare, Final Report on Contract No. 43–67–1365, January 1969. (I, III; Maximizing utilization potential, Barriers to utilization)

Five successful and five less successful applied research projects (completed through grants from the National Institute of Mental Health) were studied in depth through the life cycle of the project development in six stages: idea, design, funding, research, development and dissemination of findings, utilization. Effort was made to identify factors which enhance or inhibit effective conduct of a project, and the achievement of project objectives including production of clear, cogent, useful results which are adequately disseminated to potential users. Particularly significant are recommendations providing concrete suggestions for planning/development of research projects so as to maximize utilization potential. Suggestions include (for example) high communication awareness and involvement with relevant persons and groups (such as potential users) within and outside the immediate research environment, beginning with the inception of the project; importance of having as principal investigator the person who designed the project—and having him on the project full time, if feasible; workshops and institutes concerning the project findings which are keyed to service setting; deliberate planning for systematic dissemination of findings.

PROMOTION OF UTILIZATION
SEMINAR REPORT

Glaser, E. M., & Wrenn, C. G. *Putting research, experimental and demonstration findings to use.* Washington, D.C.: Office of Manpower Policy, Evaluation and Research, U.S. Department of Labor, 1966. (I, III; Institutional change, Dissemination of information, Middleman, Organizational linkage, Research-practitioner collaboration)

To aid in stimulating good proposal ideas the funding agency should solicit an early informal proposal, offer a small subsidy for existing knowledge. To improve the utilization of findings, the grant or contract negotiations should include: requirement that formal proposals denote utilization goals, clarification of criteria of acceptable proposals, clarification of the function of advisory or review panels, encouragement of alternative design and/or pilot studies for complex problems, and involvement of outside consultants on utilization. To improve the interaction between the funder and grantee or contractor, the funder should have an adequate staff to maintain contact with the grantee, and should not make demands for reports that do not contribute to the final dissemination and utilization of the findings. Four kinds of action which may result from E. & D. project findings are: the spread of new techniques, the continuation of projects, the spin-off of projects into other agencies, the spillover of projects acting as catalysts for change. To facilitate change in an institution, exposure to a project should be increased within the institution, project should be set up in a competing institution, outside pressure should be invoked, or self-interest of the institution should be illustrated. The utilization of findings could be increased by the identification of potential users, the evaluation of findings before an all out attempt at utilization, and extensive research into the kinds of projects that have an impact on the user. The strategies which aid in use of project findings are: availability of well-written and credible reports, dissemination of reports, person-to-person transmission of findings, use of middleman between innovator and user, use of mobile teams of resource persons, increased credibility of findings. Training of Washington E. & D. and R. & D. program staff members should be broadened to include subject matter knowledge, social sciences or business administration knowledge, research methodology knowledge, dissemination knowledge, and knowledge of how to cope with conflict. Establishing an inter-agency project review committee would aid in the coordination between investigators of problem areas. There also should be established a data retrieval system, and subject matter conferences should be held. The agencies should consult to determine joint priorities and the need for replication of findings. It is recommended that the seminar become an annual conference with increased membership and that there be a greater interchange in the use of case studies.

CHANGE AGENTS
DESCRIPTIVE ANALYSIS

Glidewell, J. C. The entry problem in consultation. *Journal of Social Issues*, 1959, 15 (2), 51–59. (IV, II; Models for change, Strategies for effecting change)

The entry of a consultant into an existing organization or social system is examined as a special case of the general problem of adding a new member to a group. The predictability of the consultant's contribution to ultimate values and immediate goals is determined by the extent to which he possesses characteristics needed by the group and not currently available. The consultant must be congruent with group values and complement group roles, and he and the client system must agree about stabilities and change tendencies regarding perception of need, assignment of values, role expectation, resource and reward allocation, and expectancies about control of dependency. Five separate dynamic dimensions are outlined: extent of concensus that a need exists and is important, managerial allocation of roles according to resources possessed by the system and by the consultant, equitability of time and idea distribution by the consultant to members of the client organization, congruence between the consultant's fee and equitable distribution of reward to the system, and the quality of the dependency relation between members of the client system and the consultant. The search for the "best" adjustment of each dimension is endless and the consultant will either be congruent with the system (implying almost no change), complementary to the system (implying slow change), or in conflict with it (implying either fast change or termination of the relationship). The adventuresomeness of the consultant may determine how much structure is required in terms of mutual agreement.

PROMOTION OF UTILIZATION

THEORETICAL ANALYSIS

Glock, Charles Y. Applied social research: Some conditions affecting its utilization. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science,* Vol. 1., Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 1–19. (I, III; Barriers to utilization, Research-practitioner collaboration, Middleman role)

Research is usually undertaken to serve the functions of evaluation, diagnosis and prescription. Social research generally best serves the purpose of evaluation. When a client commissions research he is usually seeking prescriptive aid. The most usable research is that which identifies variables which are inherently controllable and can be manipulated by the client organization. The client organization makes best use of research findings when they have a research unit integrated into their operations, when the decision to use and promote research is made at the top levels, and when the organization is flexible. The role of the research organization is best fulfilled when the interests and image of ultimate utility for the findings of the research organization parallels that of the client organization. This sometimes calls for compromise of research standards on the part of the research organization and places pressure on them to stretch their interpretations beyond what the data can support. The advantage of the accumulated experience in the specific area of a research program incorporated in the structure of the client organization probably outweighs the advantage of increased competence of the independent research organization. For best interaction the client organization should be represented by its policy maker and qualified research technician, the research organization by its chief executive and the project director. Interaction should be frequent and serve the functions of: (a) clarifying practical objectives, (b) establishing a research design, (c) monitoring the research in process, (d) identifying applicable findings, and (e) settling administrative and financial arrangements. A study which tests a clear set of propositions, as opposed to compiling information, and which is comprehensive with a high level of technical proficiency, has a greater chance for utilization. There is a need for a middleman trained in the method of research and art of utilization, a wider circulation of relevant case studies, and more knowledge of ways in which social research can and cannot be used.

CHARACTERISTICS OF ORGANIZATIONAL LEADERSHIP

CASE STUDY ANALYSIS

Glover, E. E. Social welfare administration: A social work method. *Child Welfare,* 1965, 44 (8), 431–441 & 467. (IV, II; Organizational and institutional change, Organizational factors involving innovation)

A method that combines the components of social work practice with knowledge of general principles of administration can be designated as a *social work administrative method.* This study examined crisis situations that affected board-executive relationships and how executives dealt with them. Executives of ten voluntary agencies were interviewed and seven categories of activities were established. The latter ranged from use of self in a consciously disciplined way to helping board members perform more effectively. Five judges checked these categories as operative in crisis situations. Eighty percent of the executives used one or more of six activities defined as essential in all social work methods and 70 percent used as many as three to five. This combination of social work values, goals, knowledge, and techniques places the activities of the executives in the method of social work administration. This agrees with Sue Spencer's position that there is a distinct administration method, and differs from those who see community organization as the method used by executives in their work with boards. The study utilizes the conceptual framework of Edward E. Schwartz, proposing that the social work methods be distinguished not on the client system but on levels of human organization. In the administration method the level that is worked with is the agency itself including the people within a given administrative structure.

COMMUNICATION

SURVEY/SUGGESTIONS

Goldberg, I. I. Mental retardation: Who says what to whom? *American Journal of Mental Deficiency,* 1966, 71 (1), 4–12. (I, IV; Opinions and attitudes concerning change, Educational diffusion, Strategies for effecting change in field of mental retardation)

The presidential address presented at the 90th annual meeting of the American Association on Mental Deficiency reiterates the problems involved in the *process of communication in the field of mental retardation.* Of 115 letters sent to specialists in the field, 60 replies indicated a need for models of the communication process that incorporate the diversity of position and function of communicators and audiences. A formula for analysis of a communication process utilizes the questions "who says what? in what channel? to whom? and with what effect?" This system, with the addition of the audience's effect on the communicator, resulted in the analysis of communication in terms of the communicator, message, channel, audience, and effects. Mental retardation is becoming recognized as a major national problem with the potential of developing its own unique career occupations and specialized professions. In the past the field has attracted professionals who happen to have a secondary interest. The future may see the field attract those primarily interested in mental retardation. These workers then could be classified according to their major functions instead of disciplinary affiliations. The broad categories that were proposed are: (1) retardationists—those who engage in direct service to the public, (2) retardationologists—scientists interested in research, and (3) retardationaries—promoters of legislation and services. Communication may be enhanced through the use of this classification system.

PROMOTION OF UTILIZATION

THEORETICAL ANALYSIS

Goldin, G. J., Margolin, K. N., & Stotsky, B. A. The utilization of rehabilitation research: Concepts, principles and research. *Northeastern Studies in Vocational Rehabilitation*, 1969, No. 6. (I, III; Development of linkage, Resistance to change, Research dissemination, Disseminating information)

In a survey conducted to determine use made of two published monographs, it was found that the papers were most used in literature reviews and training programs. The monographs were least used for preparing research designs, in clinical practice, in administrative planning, and in social planning. There seems to be a need for increased training and motivation of the use of research findings at the level of clinical practice. In order to increase the use of publications they should clearly state utilization possibilities and be written to capture the reader's interest. The effectiveness and utilization of research material depends on the quality and interaction of four subsystems: information-education system, produces and transmits knowledge; diffusion system, challenges existing norms and values; change system, mediates between agencies of the information-education system and targets of change; action system, supplies financial support and sets up steps for adoption of innovation. Progress toward research utilization goes through five stages: results dissemination, information reception, conceptual comprehension, psychosocial acceptance, and internalized assimilation. For aggressive dissemination a target audience of key individuals should be selected to receive the information. Research results must be presented in such a way as to break down psychological and sociological resistance. In order to establish a needed partnership between researcher, practitioner and rehabilitation administrator these recommendations are made: it should be required that the practitioner read and report on a specified number of research studies, there should be established a national research utilization committee to advise on and stimulate the utilization of rehabilitation research, Research Utilization Committees on a level with the National Rehabilitation Research Committee should be organized at the State rehabilitation agency level, training programs of rehabilitation researchers should include research utilization and the psychosocial factors in change, organizations such as the National Rehabilitation Association should advocate the adoption of important research findings, a section outlining plans for utilization should be included in research proposals, face to face contacts should be encouraged through consultation programs and conferences at all levels, training programs of both researchers and practitioners should include ways of improving dissemination and utilization of research findings.

MODEL FOR CHANGE

DESCRIPTIVE ANALYSIS

Goodwin, L. Conceptualizing the action process: How the actions of individuals relate to the guiding of social change. *Sociology and Social Research*, April 1966, 50, 377–392. (IV, II; Characteristics of innovative persons and groups, Communication, Opinions and attitudes in change)

The paper attempts to define "action" in order to plan research on the relation between actions of persons and the guiding of social change. Human activity is voluntaristic in that "it cannot be predicted from scientific formulations with complete accuracy. This is due to the effects of feedback on continuing activity. Action is defined as "motor activity which is guided continuously by symbol activity . . ." and one of its major functions is to maxmize positive affect and minimize negative affects. The effectiveness of an individual's action system can be evaluated in terms of how well he probes a changing situation, assesses the consequences of his activities, and reorganizes his activities. A group is "two or more persons who identify themselves as a social unit" and have common goals and a pattern of roles. Its effectiveness can be assessed in terms of how well members communicate about goal-fulfillment and new goals, and how effective individual action systems are. A group's effectiveness is related to but not the same as the amount of influence it can mobilize to shape other action systems. Individual action, group structure and effectiveness, and group influence are interrelated.

EDUCATIONAL CHANGE
ANALYSIS

Gordon, Garford G. Sacred cows, shibboleths, panaceas and progress. *Phi Delta Kappan,* May 1965, 46, 447–449. (IV; Organizational change, Resistance to change, Barriers to change, Research-practitioner collaboration)

The author exposes those elements in the field of education that encourage status quo, cover up lack of progress and yet pass for progress. "Sacred cows" are ideas which are accepted without question—for example, that education can meet all needs, that individualism prevails, that public opinion is a valid criterion for success of a school program. "Shibboleths" are terms that have become stereotyped and are used without examining their original meaning, such as "positive," "constructive" and "democratic." "Panaceas" are ideas and schemes that become so popular they are used as solutions to all problems, e.g., programmed instruction, language labs and ungraded classes. As an answer to these problems in education today, the author calls for more and better research—not the kind that is often misused as a panacea itself, but good fundamental statistics, better coordination and more realistic goals.

CHARACTERISTICS OF PERSONS IN CHANGE
EXPERIMENTAL STUDY

Goshen, C. E. A systems analysis of the decision-making process in psychiatry and basic science. *American Journal of Psychotherapy* 1966, 20 (2), 235–251. (II; Opinions and attitudes during change, Resistance to change, Response to innovation, Educational diffusion)

The decision-making process, the fundamental basic science of psychiatry, has been subjected to a systems analysis, the scientific study of complex systems. The end product is a flow diagram that shows the interrelationships of the components of the system, as well as inputs from outside and outputs leaving the system. The output of one component becomes the input to the next. What flows from one component to the next is either a signal, information, or power, the energy needed to activate the system. Variations of the ordinary rational thinking processes, neurotic and schizophrenic thinking, are further analyzed as examples of complex systems and variants of the rational process. Flow diagrams are used to illustrate the systems analysis of the physiology of behavior, the rational thinking process, alternate routes of thinking—irrational, neurotic, and schizophrenic thinking. It is proposed that the systems analysis presented lends itself to an orderly and simple way of understanding, teaching, and communicating ideas about human behavioral and psychiatric problems.

ORGANIZATIONAL CHANGE
CASE STUDY ANALYSIS

Goss, M. E. W. Influence and authority among physicians in an outpatient clinic. *American Sociological Review,* 1961, 26, 39–50. (IV; Organizational factors involving innovation, Use of groups for change, Professional norms and values)

The principle of hierarchy involved in Weber's conception of bureaucracy is incompatible with preservation of the individual authority required by professionals in their work. Available analyses indicate, however, that even among nonprofessionals the relationships between superordinates and subordinates in a work hierarchy are likely to deviate from those outlined by Weber in that they are affected by the norms and values workers bring to the situation. The present study of the norms, values, and behavior exhibited by an hierarchically organized group of physicians in a medical center suggests that supervisory relationships among physicians represent an extreme case of such deviation. It also provides clues regarding specific social mechanisms that serve to reconcile maintenance of individual authority with hierarchical organization.

MODELS FOR CHANGE

THEORETICAL ANALYSIS

Gouldner, Alvin W. Theoretical requirements of the applied social sciences. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 85–97. (III; Strategies for effecting change, Evaluation of change)

There is a difference between the theoretical and conceptual needs of pure science and applied social science due to the orientation of applied social science to values of laymen as well as scientists. Four value-foci of the applied social scientist are: the reduction of various forms of social deviancy; improvement of efficiency for pursuing lay goals; reduction of tensions or conflicts as in race relations; and reduction of tensions between groups and their environments. Variables and concepts must be selected not only for their reliability and predictive power, but also for their accessibility to control. Controllability might depend on technology, compatibility with the value system of the layman or cost. Systems models which stress the interdependence of variables are useful to the applied social scientist in predicting unanticipated effects on elements other than the one toward which change is directed; in indicating indirect as well as direct ways of changing an element of the system; in indicating the multiplicity of ways of intervening in a problem. Systems models do not, however, provide clues concerning preferential points of entry into a system in terms of comparative costs and efficiency of different variables. The applied social scientist needs some way of assigning weights to different components. This need results in a tendency toward single-variable models. It is important to develop a theory of unanticipated consequences because it directs attention to variables that appear to be uncontrollable because they have not been previously identified. The tradition of planned change is traced from the earlier, major behavioral scientists who were concerned with bringing social science to bear on the problems and values of laymen.

UTILIZATION

SURVEY AND SUGGESTIONS

Greenberg, D. S. Civilian technology; NASA study finds little "spinoff." *Science*, 1967, 157 (3792), 1016–1018. (I; Barriers to utilization, Disseminating information, Scientific spinoff, Diffusing of information)

Denver Research Institute's recent report "The Channels of Technology Acquisition in Commercial Firms and the NASA Dissemination Program" surveys 62 firms in four industries—electric batteries, printing and reproduction, industrial controls, and medical electronics—and 11 "vocational-technical schools." Few, if any, of these organizations are vigorously seeking to engage directly in the vast outpouring of science and technology that the federal government is underwriting, and little has been done to simplify the problem of increasing the technical awareness of nonspace or nonmilitary manufacturers. Instead, the technologist with a problem is inclined to fall back on the standard manuals and textbooks with which he is already familiar. Government publications are not perceived as major channels for acquiring technological information. The variety and mass of these publications poses great screening and selection problems. Most organizations had one person who valued the Official Gazette of the U.S. Patent Office, but most people expect to learn of government developed R. & D. through trade and professional channels. The government centers are not easily used and so not valued highly. The preferred channels were found to be professional journals, face-to-face contacts, especially conventions and symposia. Highly specific subject matter conferences were valued most. Since more than one-third of the respondents had taken course work in the previous year, courses were recommended for disseminating either directly by having industrial scientists or engineers lecture, or by giving "problem-solving courses emphasizing technology acquisition." Internships for industrial employees in federal labs were also suggested.

RESEARCH-PRACTITIONER RELATIONSHIP

THEORETICAL ANALYSIS

Greenwood, Ernest. The practice of science and the science of practice. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 73–82. (III; Research-practitioner collaboration, Middleman role)

The function of science is one of description and explanation of nature, while the function of practice is one of controlled changes in nature. "Scientific theory consists of laws describing and explaining nature; practice theory consists of principles prescribing ways of controlling nature." There exists a group of hybrids—the applied-oriented scientist and the theory-oriented practitioner. This group of hybrids can serve as a middle group between science and practice to facilitate communication between the two. If this communication is desirable, the social structures must be created to foster and promote it.

ORGANIZATIONAL CHANGE

SURVEY

Greiner, Larry E. Patterns of organization change. *Harvard Business Review,* 1967, 45, 119–130. (IV, II; Organizational change, Resistance to change, Attitudes affecting change, Use of groups for change, Planning for change)

Fragmented changes have been found to be unsuccessful in holding off the stagnation which can develop within an organization. Management that is oriented to the past, adheres to ritual in face of current problems, and attends more to departmental goals than to company goals, tends to become rigid and uncreative. Attitudes toward change depend on whether the authority is unilateral, shared or delegated. The approaches taken by unilateral authority are that change is decreed, key personnel is replaced, and/or the organizational structure is altered. Under a shared authority change is usually instigated through group decision or group problem-solving. A delegated authority makes its move toward change through case discussions and T-group sessions. Successful changes (most often under shared authority) spread throughout the organization and result in improved performance. When change is less successful there is a lack of consistency and different patterns appear. Where change is successful it passes through these stages: management is under pressure, action is taken to intervene, internal problems are examined, problem areas are diagnosed, specific problems are identified, new solutions are found, new commitments are made, results are sought, positive results are reinforced, and new practices are accepted. To foster future change management should not depend on master plans, either unilateral or delegated approaches, or egocentric notions.

ORGANIZATIONAL CHANGE

THEORETICAL ANALYSIS

Griffiths, Daniel E. Administrative theory and change in organizations. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 425–436. (IV, II; Characteristics of organizations, Organizational factors involving innovation, Adaptation of innovation)

An organization is an open system as opposed to a closed system. Change is not characteristic of an open system. Open systems relate to and make exchanges with their environment through human interaction which maintains a definite boundary. The administration is a subsystem, the environment a supra-system of the organization. The supra-system is the major impetus for change, the intensity of the stimulus from the supra-system being directly proportional to the degree and duration of change within an organization. If the successor to the chief administrator is from outside the organization, change is more probable. The number of innovations is inversely proportional to the time that the chief administrator spends in office. Under continuous, increasing stress, living systems react slowly at first, then tend to over-compensate, and finally react by catastrophic collapse of the system. The more hierarchical the structure and the more functional the interaction between subsystems, the less the possibility of change. Change in an organization tends to come from the top down.

PROMOTION AND SUGGESTIONS

ANALYSIS AND SUGGESTIONS

Guba, Egon G. Development, diffusion and evaluation. In T. L. Eidell & J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968. Pp. 37–63. (III, I; Change agents, Planning for change, Diffusing of information, Middleman role, Research-practitioner gap, Promotion of utilization)

A gap exists between knowledge production and knowledge utilization which cannot be spanned by either the producer or the utilizer. New mechanisms, agencies and techniques are required to bridge the gap. The continuum from theory to practice, research to utilization, has four phases: research, development, diffusion and adoption. Development is a function that neither the researcher nor practitioner can handle. In the diffusion phase it is suggested that a diffusion strategy be used. A strategy is a plan that denotes which adoption techniques should be used, in what combination, at what time, and in what place. When developing a strategy the elements to be considered are: the nature of the practitioner, the state in which one wants to leave the practitioner, the nature of the agency or mechanism of diffusion, and the degree of change required by the invention. Evaluation activities should be of four kinds: context evaluation, input evaluation, process evaluation, and product evaluation. Evaluation should become more of an aid in decision-making than a judgment operation.

STRATEGIES FOR EFFECTING CHANGE

THEORETICAL ANALYSIS

Guba, Egon G. Methodological strategies for educational change. Paper presented to the Conference on Strategies for Educational Change. Washington, D.C., November 1965. Summarized in *SEC Newsletter: Strategies for Educational Change,* 1965, 1 (4), 4. (IV, II; Planning change research)

The paper is addressed directly to the researcher. Two general strategies available to an investigator of social change are identified as: (1) experimental, and (2) an experimental or field study. In the present state of theorizing and research in educational change, experimental techniques may be premature, while the field study approach is probably more suitable for reasons of the particular setting of change research, the level of control, the breadth of focus of change studies, number of variables and treatments involved, and the context of events being investigated. Some illustrative tactics for field studies suggested are: (1) programmatic approach to selection of research objectives based on logical priorities, (2) explication of theoretical and logical framework of study, (3) coping with the realities of the field situation and availing of new openings when available, (4) replication and recycling of data to build accumulative evidence, (5) use of quasi-experimental designs whenever possible, (6) substitution of purposeful focusing to make up for a lack of experimental control, (7) development of techniques for collecting "educational evidence" to study change and its consequences, (8) emphasis on logical inference rather than statistical inference, and (9) analysis of pathologies—field studies that turned out badly—to gain insights.

UTILIZING KNOWLEDGE
SUGGESTIONS

Guetzkow, Harold. Conversion barriers in using the social sciences. *Administrative Science Quarterly,* June 1959, 4 (1), 68–81. (III, I; Middleman role, Barriers to utilization, Promotion of utilization, Research-practitioner gap)

Tested theories of social science must be converted into forms that can help make predictions in concrete situations. Part of the process of converting theories into a usable form is the reidentification and measurement of variables; this calls for a simplification of measuring devices. Next a model must be selected from variables of alternative theories; in order to best do this, there should be feedback systems built into the model. Finally the magnitude of important constants should be determined to enable specific predictions to be made for different situations. The social scientist conceptualizes the variables, indicates their operational measurement, and specifies ways in which the variables are related. The practitioner ascertains at the time of application the magnitude of the parameters. There is a need for a middleman who could transform basic knowledge into usable forms. He would develop practical measure of variables, select appropriate theories, and repeat the analysis of the initial conditions when situations change. The failure in the use of social science knowledge is often the result of an inadequate assessment of initial conditions and nonrecognition of the varying degrees of importance of different factors. Tasks that face the social scientist are different from those that face the user of social science knowledge; for each, different experts are needed.

EDUCATIONAL INNOVATION
EMPIRICAL STUDY

Haber, Ralph N. The spread of an innovation: High school language laboratories. *Journal of Experimental Education,* 1963, 31, 359–369. (II; Adoption process, Characteristics of adoptive persons, Change agents, Middleman role)

In a study of 51 high schools which had been early adopters of language laboratories, the findings reveal that language teachers were most prominent in the adoption process. The innovation was not introduced from the outside, but rather was initiated by those who were familiar with it and those who would be using it in the schools. The middleman function did not seem to play a large part, at least not in the initiation stages. In actual adoption, findings showed that the support of the teachers who would be using the labs was essential. The enthusiasm of these teachers for the labs also accounted for the relatively short time lag from initiation to adoption, although final decision to adopt always rested with the administrators. Contrary to most studies where initiators generally have little responsibility past the introduction of an idea, here they have the burden of carrying their ideas to adoption. Colleges and universities where the "modern" trained teachers were schooled can be seen as the major source of the innovation. The implication is that the innovation is picked up in training, and this more or less "prepares" the teacher for change, while the nontrained teacher faces greater difficulties with innovation. Preparation of this kind explains the absence of the middlemen, as they would be relatively ineffective when up against unprepared teachers. The middleman is seen emerging when labs become established and accepted and there is less need for direct contact and testing.

EDUCATIONAL DIFFUSION
SUGGESTIONS

Hackel, Joseph P. Doctor, what motivates you to attend a medical convention? *New York State Journal of Medicine*, May 1958, 58, 1550–1552. (III; Disseminating knowledge, Promotional dissemination)

Article expresses a plea for the continued use of films at medical conventions and in private situations. The hypothesis was that motion pictures were cited more often as a reason for attending a medical convention (1,892) than closed circuit television (1,100). Total response was 8,012 replies from 19,469 questionnaires (41%). The author concludes that motion pictures are a good means of post-graduate medical education and should be used more often.

PROCESS OF INNOVATION
CASE STUDY ANALYSIS

Hage, Jerald T. Organizational response to innovation: A case study of community hospital. (Doctoral dissertation, Columbia University) Ann Arbor, Mich.: University Microfilms, 1963. No. 64–5417. (II, IV; Organizational and institutional change, Opinions and attitudes in change, Community hospital innovation)

This is a study of a group of innovators who attempted to improve the effectiveness of *patient care and medical education in a community hospital.* The major focus of this four-year study is on the changes made or attempted and the attitudes of the physicians toward these innovations. The major change involved the addition of full-time teacher-physicians to the staff of Community Hospital. Since this change represents the addition of a new social position with new activities, it is defined as structural innovation. The intended consequence of the innovation was the improvement of patient care and medical education via the addition of new activities—e.g., teaching rounds, grand rounds, morning report, etc. Besides these intended consequences, the addition of full-time teachers meant the possibility of fewer patient referrals and lessened authority for the active staff. The saliency of each of these consequences varied depending on each physician's work and education patterns. If he preferred teamwork and learning by reading—as, for example, the medical men and the specialists did—then he felt that the consequences for patient care and medical education were most salient and he was predisposed to accept the change. If he preferred individual autonomy and learning by experience—as, for example, the surgeons and general practitioners did—then he felt that the most salient consequences were fewer patient referrals and lessened physician authority, and he was therefore predisposed to reject the change. In addition, a physician was more likely to accept the addition of full-time teachers if he belonged to a department which had a history of change; such physicians exhibited a propensity for acceptance. The medical department accepted more changes than the other three departments. As more changes were implemented, the explanatory power of these three variables—work and education patterns and departmental characteristics—in accounting for the acceptance of change increased. Of these three, the departmental history of change was the most important. The addition of full-time teachers resulted in many unanticipated consequences for the organization of the hospital. The power of the administration vis-a-vis the active staff increased. The resulting conflicts led to more rapport and better communication among the administration, the active staff, and the house staff. Finally, the value placed on patient care and education increased. The study of Community Hospital views the addition of the full-time teachers as a social change process. Changes and consequences affected attitudes, which in turn shaped future changes and consequences. An attempt was made to specify stages in this process and to define some theoretical problems suggested by the analysis.

ORGANIZATIONAL CHANGE
ANALYSIS

Hage, J. & Aiken, M. *Social change in complex organizations.* New York: Random House, 1970, Chapter II. (IV, II; Organizational climate for change; Factors inhibiting change)

This chapter hypothesizes that the rate of program change increases in proportion to (a) the level of staff knowledge and expertise, and (b) job satisfaction (morale). In general, the higher the level of each, the greater the rate of program change. In proportion to the emphasis an organization places on (a) centralization of power and decision-making, (b) formalized rules and procedures, (c) stratification of rewards, (d) high production, and (e) efficiency . . . in general, the higher the degree of each, the lower the rate of program change.

DISSEMINATING KNOWLEDGE
SUGGESTIONS

Hake, David L. Improving the information flow. *Bulletin of the Atomic Scientists,* 1962 18 (9), 21–22. (I; Utilizing information, Promotion of utilization, Selecting information)

Accepting the premise that the advancement of knowledge through dissemination of results constitutes the ultimate goal of all research imposes a large responsibility on the federal government. Federally supported research and development has increased from $100 million annually before 1940 to $10 billion annually since 1960. Unfortunately, scientific journals have not been able to publish the large increase of information promptly and fully. A question is raised whether we can maintain a paramount scientific position without improving the dissemination of scientific and technical information. Recent years have seen an avalanche of new systems developed to recover scientific and technical information, but unfortunately the average time lag between completion of a project and availability of the results is two years. Suggestions for improving the flow of information include: distinguishing significant information (deserving prompt and wide dissemination) from useful information (more limited audience and less urgency); developing standards for scientific and technical reports; scheduling of topical reports; evaluation of all information; restricting flow of information by exposure to impartial scrutiny.

COMMUNITY COOPERATION
CASE STUDY ANALYSIS

Hallock, A. C. K., & Vaughan, W. T. Community organization: A dynamic component of community mental health practice. *American Journal of Orthopsychiatry,* 1956, 26, 691–708. (IV, II; Change agents, Organizational and institutional change, Educational diffusion/dissemination, Use of groups for change)

The history, structure, and operation of the Massachusetts community health program is presented in order to illustrate the important *role private community organizations can play in the success of a community mental health program.* Community mental health practice is defined as a combination of clinical psychiatry and public health, in which the goal is the fostering of healthy human relationships throughout a community. In such practice, habitual modes of interaction and interpersonal relations which do not promote mental health, or are pathogenic, are altered by the systematic application of professional techniques. The Massachusetts program consists of three basic components: mental health education, mental health consultation, and clinical services. Education serves to increase knowledge of human relations and mental health in various community groups. Consultation involves interaction with a variety of key individuals in the social system, with an orientation toward prevention of mental disturbance. Clinical services in this program are administered by a four-man team: psychiatrist, social worker, clinical psychologist, and community mental health consultant. This three-phase program has been put into operation with the assistance of numerous locally-organized mental health associations, each serving to involve the community with the program. Experience with this method in Massachusetts has led to the following general conclusions: (1) an organized community mental health group is an integral, vital part of a community mental health program; (2) the community group should join with the professional team on a partnership basis; (3) the goal of such a program is change in habitual patterns of interpersonal relations in the social system of the community; (4) the professional worker should be concerned with the psychology of change, both in treatment within the clinic and in the community; (5) increased communication and interaction between key individuals in the community is an important goal; (6) low turnover of professional personnel is important; (7) with proper guidance, the community groups can take active leadership in building the mental health program. These conclusions, while tentative, are the product of a systematic effort to develop a mental health program which utilizes both professional and community resources.

PROMOTION OF UTILIZATION
ANALYSIS/SUGGESTIONS

Halpert, Harold P. Communications as a basic tool in promoting utilization of research findings. *Community Mental Health Journal,* 1966, 2 (3), 231–236. (III, I; Barriers to utilization, Strategies for overcoming barriers)

Innovators frequently do not write up their findings. Even if they do, dissemination of research results usually is insufficient to achieve utilization. Reports would be more useful if authors analyzed their research in terms of applicability to service programs. Other barriers: potential users are flooded with information; practitioners often see researchers as divorced from practice realities; practitioners are reluctant to change. Some Rx for dealing with barriers: analyze consumer needs before research is undertaken and focus on those needs; aim abstracts and review papers at particular audiences; hold interdisciplinary conferences on specific themes; arrange for potential users to visit places where innovation is being used;

provide technical assistance to help with implementation; aim initial communication of innovation at high-status practitioners; show cost-benefits of new techniques to the achievement of established organizational goals.

CHANGING OPINIONS AND ATTITUDES

READINGS/REVIEW

Halpert, Harold P. *Public opinions and attitudes about mental health: A summary of surveys; and implications for communications.* National Institute of Mental Health Research Utilization Series. Washington, D.C.: Government Printing Office, 1963. (III, I; Educational and research communication, Opinions and attitudes concerning mental illness)

The author reviews the survey findings of public opinions and attitudes about mental illness in the last 15 years. The disparity of variables studied limits comparison. However, the general impression is that attitudes toward the mentally ill are changing and that there is a variety of opinions and attitudes. Some of the factors investigated in these studies are the causes, possible outcomes, types and availability of resources for treatment, recognition of mental illness, characterization in terms of sickness or deviance, treatment and problems of communication of information and knowledge. The factors are studied in relation to age, income, education, occupation and sex. Lay and professional differences, as well as differences between leaders in various sectors of the community, were surveyed. Discrepancy between leaders and their institutional orders was cited. Implications for communications about mental health based on two sets of factors are discussed.

PROMOTIONAL DIFFUSION

RECOMMENDATIONS

Halpert, Harold P. Public relations in mental health programs. *Public Health Reports,* 1965, 80 (3), 195–200. (II, IV; Educational diffusion, Opinions and attitudes concerning change, Strategies for effecting change, Community cooperation, Disseminating/diffusing information, Diffusing mental health innovations)

Mental health program planning and administration need to focus public relations on the gains made so far in the publicly declared or civic attitudes toward mental illness. Changes in attitudes that people express publicly may precede changes in felt attitudes and in attitudes on which their actions are predicated. Nonetheless, expressed attitudes provide a receptive climate for the newer therapies, and a base on which to build better understanding and concrete support of modern mental health programs. A public relations program is considered successful when it has identified, informed, and motivated in its interest all those people who can make a significant contribution to the success of its program. Such programs aim at three objectives: (1) financial support, (2) psychological support, and (3) acceptance and use of the new types of facilities so that the goals of early treatment can be achieved. Categories of target audiences include: (1) the supporting public, comprised of political authorities, legislative bodies, taxpayers, voters, and local opinion molders—people who make up the community power structure and whose opinions are influenced by the mass communications media; (2) the operating public, comprised of the specialized disciplines within a mental health program and the groups with whom they must work; (3) the receiving public, those who have, are, or will be using the services, and (4) the amorphous general public, including all the civic, service, and volunteer organizations. Studies have been made of the various publics and the effectiveness of methods used to reach them.

PROMOTIONAL DIFFUSION
REVIEW/SUGGESTIONS

Halpert, Harold P. Surveys of public opinions and attitudes about mental illness. *Public Health Reports,* 1965, 80 (7), 589–597. (II; Educational dissemination, Opinions and attitudes concerning change, Diffusing information, Strategies for effecting change, Mental health innovations)

A review of surveys of *public opinions and attitudes about mental illness* over the past fifteen years demonstrates increasing public understanding and acceptance of the mentally ill. Younger people, better educated people, and those in higher status occupations generally have more enlightened opinions. Attitudes are likely to be affected by an individual's professional frame of reference, and are directly related to the amount of exposure to mental illness. Implications are: (1) people need knowledge of resources for help; (2) educational programs are needed for low income, poorly educated groups; (3) the public needs information about mental health and mental illness, and (4) educational activities should have well-defined, concrete, purposeful objectives appropriate to the particular public.

BARRIERS TO CHANGE
THEORETICAL ANALYSIS

Halpin, Andrew W. Problems in the use of communications media in the dissemination and implementation of educational research. In K. Goldhammer & S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962. Pp. 171–200. (I; Resistance to change, Change agents, Characteristics of practitioners)

The author finds that one of the barriers to educational change is that the purpose of education is often unclear; even when clear it does not receive unequivocal support from society. The fact that public education is a monopoly is another barrier. The "need-affiliation" of teachers and administrators works against change and creates a sameness among practitioners. The author thinks there should be no need for a change agent; research should not have to be translated for the practitioners. Most institutions are not willing to pay a top-level salary for a change agent, thus it would be hard to find competent people to fill these positions.

EDUCATION OF CHANGE AGENTS
PRINCIPLES

Harrison, R., & Hopkins, R. The design of cross-cultural training: An alternative to the university model. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 373–395. (II; Models for change; Strategies for effecting change; Educational innovation)

This paper presents a detailed analysis of the inadequacies of conventional American higher education for training change agents. Conventional American higher education is not suited to training for any application situation that requires the ability to adapt to or act in unfamiliar and ambiguous social situations. Included in this category would be all types of community development or community action work, at home or abroad. This paper analyses the basis for this inadequacy by contrasting the goals of university education and the goals of education for the change agent role. A conception of some learning processes that can lead to the ability to cope with ambiguity and to take action under stress is presented. The principles for this kind of training are designed for aiding an inductive rather than the traditional deductive approach. These principles include: (1) exposure to situations which require diagnosis, definition of problems, devising solutions and taking action; (2) immediate data orientation as distinguished from secondhand and abstract sources of information; (3) exposure to situations involving competing cultural values; (4) experience and action as distinguished from understanding only; (5) use of authority to promote experimentation, risk-taking and self-expression in the learner; (6) use of expertise to teach the problem-solving process rather than supplying information. Training settings and staff preparation for this type of education are discussed.

OPINIONS AND ATTITUDES CONCERNING CHANGE

LABORATORY STUDY

Harsch, O. H., & Zimmer, H. An experimental approximation of thought reform. *Journal of Consulting Psychology,* 1965, 29 (5), 475–479. (II; Characteristics of persons in process of change, Adoption of innovation, Introducing innovation, Strategies for overcoming resistance to change)

Thought reform processes were simulated in the laboratory with 96 subjects. Subjects were required to evolve an extended series of alternative responses from their own behavior repertoire in successive approximation to the criterion demanded by the examiner which remained unknown to the subjects. This study sought to achieve the abandonment of a basic behavior pattern and the adoption of a new behavior pattern of more than momentary duration. The experimentally induced changes of the subjects, in the direction opposite to their starting positions, persisted over an eight-day followup period. Sex and use of positive or negative signals had no effect on the magnitude of the changes.

LINKAGE

THEORETICAL ANALYSIS

Havelock, Ronald G. Dissemination and translation roles. In T. L. Eidell & J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968. Pp. 64–119. (III; Middleman, Change agents, Disseminating information)

There are eight major types of linking roles: conveyor, consultant, leader, innovator, defender, knowledge-builder, practitioner, and user. There is an interlocking chain of functions that the consultant or conveyor uses to link the *resource system* (the scholar, the basic researcher, the expert, the producer and packager, and R. & D.) to the *client system* (the defender, the innovator, the leader, and the user). The resource system works primarily through the university. Linking agents can be independent, can be in practice, employed by the government, employed by a university, or employed by a commercial institution. The client system works through the professions and the bureaucracies. If communications are good and leadership is effective, the specialized bureaucrat is a good target for the linker. The effectiveness of the independent linker is limited by his part-time operation; his sporadic and haphazard operations; and his inability to provide training, special skills and equipment. Permanent linking institutions are: laboratories, companies, associations and institutions. Temporary linking institutions are: projects, programs, committees, courses, conferences and conventions. Through subdivision into temporary units, permanent linking institutions avoid the pitfalls of isolation, self-satisfaction and rigidity. At the same time, they provide security, identity and coordination. An overload can develop at each of the three steps—input, throughput, output—of the linking operation. A problem can exist for the linking agent in that he is neither a part of the research nor the practice world. To build a functioning system of linking agents there must be: a supportive institution, recruitment of candidates, training of recruits and a supply of equipment.

EDUCATIONAL INNOVATION

THEORETICAL ANALYSIS

Havelock, Ronald G. *A guide to innovation in education.* Ann Arbor, Mich.: Center for Research on the Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1970. (IV; Change agents, Organizational and institutional change, Introducing innovation, Processes of innovation)

To function effectively as a change agent, the client system should be analyzed for its norms, leaders, informal leadership, gatekeepers and elements with which the agent can most effectively work. The larger social environment also should be analyzed for its norms, quality of leadership, influential persons, and potential involvement in the change program. There are advantages and disadvantages to both the inside and outside change agent. Disadvantages of the outsider are advantages of the insider: being an unfamiliar figure, lacking inside information, being unfamiliar with the system's goals and aspirations. Advantages of the outsider are the disadvantages of the insider: having independence of movement and relationships, having a new perspective, having special skills, and having a fresh start. In the best relationship between client and change agent there is reciprocity, openness, realistic expectation, well defined structure, shared power, and minimum threat. A danger to change exists if there is a history of unresponsiveness, an attempt to use the agent as a pawn, a prior commitment by the client to a position, or an incapacity of the client. Three approaches to diagnose for change are identification of problems, identification of opportunities, and understanding of the client's system. A good diagnosis should discover if there are structure and capacity for achieving the goals of the system, an openness in communications, a system of rewards for movement toward the goals. Diagnosis should not waste time or energy, be used for stalling, be used for destructive confrontation, impose one's own favorite diagnosis, or impose crash programs. Resource information can be used for the original diagnosis, for the evaluation and maintenance of the innovation. Resources can include informants from the system, observations of the system and its output, and information banks (libraries, clearinghouses, etc.). Knowledge of how to acquire, when and where to use resource information should become a permanent capacity of the client. The client's choice of solutions is a four step process: inferring solutions from research; brainstorming a selection of solutions; testing solutions in terms of benefits, workability, and diffusibility; and adapting the solutions to the setting. The change agent helps the acceptance of the innovations by giving his support and aid to the individual, by using community leaders and innovators to gain community support, by using effective means of communication, and by building flexibility into the program. The innovation is stabilized when there is a system of reward, practice, and evaluation built into the program; the client can serve as his own change agent; and the change agent has disengaged himself from the client.

DISSEMINATING AND UTILIZING KNOWLEDGE

THEORETICAL ANALYSIS

Havelock, Ronald G. *Planning for innovation through dissemination and utilization of knowledge.* Ann Arbor, Mich.: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1969. (Final Report, Contract No. OEC–3–7–070028–

2143, Office of Education, Department of Health, Education, and Welfare.) (I, II, II, IV; Models of dissemination/utilization, Change agent, Typology of knowledge-linking roles, Organizational change, Middleman role, Media utility)

A landmark study in field of innovation—scholarly, sophisticated, comprehensive—the analysis in this study focuses on *who* says *what* to *whom* by *what channel* to *what effect* and for *what purpose*? Extensive literature review (approximately 4,000 items) reveals current state of knowledge with respect to process of dissemination and utilization (D&U). Factors within the individual and the organization context facilitating and inhibiting input, output, throughput are identified and classified. A typology of knowledge-linking roles is formulated including: conveyor (transfers knowledge from producer to user), consultant, trainer, leader, innovator, defender, knowledge builders, practitioners, and users. The relative utility of categories of media are suggested in terms of one-way transmission (to inform mass audiences), one-way feedback (on the impact of transmitted knowledge), and two-way transmission (increases involvement on part of user and is imperative for adoption of innovation requiring alterations in attitude or behavior of user). Three D&U models are identified: the research, development and diffusion model (RD&D), social interaction model (S-I), and problem-solving model (P-S), stressing the advisability of unifying and integrating these models through proper linkers. Seven central factors which account for most D&U phenomena are: linkage, structure, openess, capacity, reward, proximity, and synerby (programmed and purposeful redundancy). In moving client from the present to desired future state of affairs, seven phases are detailed for the change agent: building a relationship, diagnosing the problem, retrieving relevant knowledge, selecting the innovation, developing supportive attitudes and behaviors, maintaining impetus for change, and stabilizing the innovation.

LINKAGE
THEORETICAL ANALYSIS

Havelock, Ronald G. Translating theory into practice. *Rehabilitation Record,* November-December 1969, 24–27. (III, I; Change agents, Research dissemination, Research-practitioner gap, Middleman role)

Though headway has been made in the dissemination, storage and retrieval of scientific information, these advances are presently of more use to the researcher than to the practitioner. A total system approach is needed to improve information flow from researcher to practitioner. To bridge the gap both temporary systems and change agents are needed. The important features of a temporary system would be: joint goal setting by practitioner and research; identification of the problem; retrieval of resources which can function as research evidence, methods, models, and consultants; continuous analysis of the human relations within the collaborative process; evaluation to determine effectiveness. The role of the change agent has moved from a conveyor of new information to that of a consultant, facilitator, or catalyst. The change agent also aids in the building of connections between the researcher and practitioner. The role of change agent needs further definition in order that he can be better trained and equipped. Human resources banks should be established for his use, and handbooks and reference manuals should be developed.

PROCESS OF RESEARCH UTILIZATION
THEORETICAL MODELS

Havelock, R. G., & Benne, K. D. An exploratory study of knowledge utilization. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart

& Winston, 1969. Pp. 124–141. (I, III; Linkage, Disseminating knowledge, Research dissemination, Research-practitioner-client relationships)

Utilization can only be understood by using two models, a systems model and a process model. The *systems model* has two major aspects: (1) a flow structure which is the network of relationships that carries information and produces need-fulfilling behaviors; and (2) the administrative structure which backs up the flow structure with education, finances, legal and administrative control, protection and growth or change maintenance. The *process model* allows us to get a more detailed picture of what is going on at the exchange points or linkages of the flow structure. The major aspects of the process models are: (1) motivational aspects which may be based on consumer needs or ego involvement; (2) interpersonal and group membership issues; and (3) technical issues of preparing and transmitting messages. The significance of schema on the utilization process are, first, that they clarify the problem and show its magnitude and, second, that they are a source of hypotheses about utilization processes and structures and their interrelationships. Appropriate evaluation criteria are needed to test "good" or "bad" utilization. Four possible strategies are suggested for the selection of evaluation criteria.

PROMOTION OF UTILIZATION
EXPERIMENTAL STUDY

Havelock, R. G., & Mann, F. C. *Research and development laboratory management knowledge utilization study.* Ann Arbor, Mich.: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1968. (Final Report to the Air Force Office of Research, Contract No. AF49(638)1732.) (III, IV; Research diffusion, Use of groups for change, Linkage)

A group of eight directors of research and development laboratories met in 12 biweekly sessions to promote utilization of social science research knowledge in the management of research and demonstration laboratories. Three basic reasons for directors' attending were: some wanted to share and compare knowledge; others wanted to advise and criticize the social science findings; still others came to learn. Three methods were used to evaluate the operations of the project: self-reports, observations of seminar behavior, and a survey of some of the various staffs of the laboratories. In the reports of the directors satisfaction was expressed, and there was evidence of utilization of the knowledge gained from the meetings. The tapes of the meetings showed a movement from understanding to acceptance of the knowledge; this change was felt to be aided by the continuing nature of the seminar. The reports of utilization made by the directors were confirmed by their staffs. In followup studies it was found that several of the directors had set up regular meetings with their staffs patterned after the seminar they had attended. The authors feel that the open-ended, multiple input approach used in this study could aid in the utilization of social science findings. Findings of social sciences have relevance but there should be a linking function to ensure use.

COMMUNICATION
EXHORTATION

Hayakawa, S. I. Conditions of success in communication. *Bulletin of the Menninger Clinic,* 1962, 26 (5), 225–236. (II; Barriers to communication, Use of groups for change)

People and nations act to maintain and build up their self-images. If we have problems communicating it is because from my self-image and point of view, your ideas seem threatening and I must fight them. Therefore I threaten you, and you act to protect yourself. Interna-

447

tional problems are caused by a mutual paranoia; if we are ever to communicate we must start listening to Russia's words without stereotyping them in advance. Listening to many different people from Russia explain themselves, their goals, their views, should start a therapeutic relationship in international relations.

UTILIZING INFORMATION
SYNTHESIS/RECOMMENDATIONS

Hayman, M., & Peskin, R. Need of the research-oriented psychiatrist for information retrieval. *Diseases of the Nervous System,* 1967, 28, 798–803. (I, III; Classifying information, Disseminating information)

Information retrieval methods available to research-oriented psychiatrists are inadequate. Subject headings in various indexes are inadequate, and many separate, overlapping indexes are needed to cover psychiatric literature. Article reviews, a bibliography of reviews, and a monthly list of mental health publications from all sources are needed. Methods for organizing a literature search are outlined: find a key article (perhaps by using the *Science Citation Index*) and use its references to find earlier important works; search subject headings of various medical and technical indexes; search annual indexes of major professional journals. Unfortunately, no literature search is perfect, and it is only after an article is published that its author will hear of some key articles he should have read first. Another alternative is to use no references at all, an approach which will occasionally produce new and valuable ideas. Defects of the *Index Medicus* are the main cause of difficulties in MEDLARS. The Rutgers Center of Alcohol Studies' *Classified Abstract Archives* is given as an example of a good attempt to produce usable bibliographies, especially since it will send reproductions of articles on request. Long articles with imprecise titles and incomplete summaries, written with disregard for clear literary style and not rejected by editors, are cited as important flaws in the information system, as are indexing backlogs and librarians unaware of recent advances. Journals publishing clear, standardized abstracts should exist, with original articles available on request.

EDUCATIONAL DISSEMINATION
RECOMMENDATIONS

Hearn, Norman E. Dissemination: After Bangkok, what? *SEC Newsletter: Strategies for Educational Change,* Ohio State University, 1968, 2 (3), 1–4. (I, III; Strategies for effecting change, Promotion of utilization, Research-practitioner gap)

The returns of spending millions of dollars on travel for educators to observe demonstrations of innovations have been minimal. Some of the reasons for this are felt to be: some innovations are such in name only, many demonstrations are unconvincing, and many demonstrations do not show how to introduce the innovation. The school superintendent, as a key person in introducing innovations in his educational district, should become familiar with his community and with theories of dissemination. The intensive training of administrators in interpersonal relationships should also aid in the introduction of educational innovations. In order for an innovation to be accepted it should have "lasting" influence. The communication about the innovation should have intelligibility and fidelity. Also, there should be feedback to determine if the message is being received.

PROMOTION OF UTILIZATION
THEORETICAL ANALYSIS

Hendriks, G. The role of research in community development. In J. A. Ponsioen (Ed.), *Social wel-*

fare policy II. The Hague: Mouton, 1963. Pp. 115–133. (I, III, IV; Research-practitioner collaboration, Planning for change, Community cooperation)

The relationship between social research and community development is discussed. Research has three roles: educational, policy-making, and criticism. Basic research establishes boundaries and priorities of a study, prepares a social survey, and then should use a community self-survey to involve people and clear up misunderstandings. Problem-solving research furnishes data, alternative solutions, and advice on possible consequences to authorities who are preparing plans. Action-research requires the researcher to be in constant contact with field workers, to evaluate effects, and to suggest alternative approaches. Eight stages of community development are distinguished: (1) formulation of the problem; (2) determination of priorities; (3) general information about goals from a self-survey; (4) searching for the best development plan for each area, and (5) combining and coordinating subsidiary plans; (6) execution of plans; (7) evaluation; and (8) revision if necessary. Research results will be used if they are applicable to the community involved (this requires the researcher to be in touch with applied researchers, administrators, planners, and field workers before writing a report), if the researcher keeps in contact with the community by various means, and if reports are clear and consist of a brief description of research, recommendations, and a summary.

ORGANIZATIONAL DEVELOPMENT
THEORETICAL ANALYSIS

Hochbaum, G. M. Health agencies and the Tower of Babel. *Public Health Reports*, 1965, 80 (4), 331–335. (IV, III; Organizational change, Resistance to change, Strategies for effecting change)

An analogy is drawn between the biblical story of the Tower of Babel and present-day community groups concerned with health and welfare. People in the biblical story had tried to work together to achieve a common goal until they realized that they could not communicate with each other, whereupon they relinquished the common goal and each group went its own way. Present-day community groups are aware of differences in objectives, interests, points of views, and language and thus are in a better position to bridge gaps and achieve cooperation. New health organizations are often led by one or two men; their organizational structure is flexible since goals are usually focused on special needs as they arise. In time these organizations develop routines and procedures that best meet objectives. Communication and operation are not necessarily easy between two groups with similar objectives. Cooperation implies giving up something or yielding, which could present a threat to organizational structure. In addition, as agencies develop a subculture of their own, so that even language becomes endowed with a special meaning, to avoid misunderstanding it is necessary to really understand the concepts and images meant by the words that are used. Agencies and organizations have two sets of goals and objectives—one deals with accomplishing its mission and the other with maintaining its existence. Recognition of an agency's need to achieve its objectives, early inclusion of other groups in the planning of a program, freedom to work independently where indicated, and recognition for activities and accomplishments can lead to better interagency work.

ORGANIZATIONAL DEVELOPMENT
ANALYSIS/SUGGESTIONS

Horne, Charles F. The impact of government research on business firms. *Research Management*, 1962, 5, 323–338. (IV, I; Planning for change, Organizational climate for change, Selecting information)

The author, president of a company whose research is financed primarily by the Federal government, discusses the *impact of government research on the free enterprise system.* He lists strengths fostered by the relationship: the "national interest" concept has gotten us into competition with other countries and into space, it has resulted in better management, it simplifies sales and increases predictability, and government representatives and auditors keep business honest. Weaknesses of the system include the limits placed on information exchange by security regulations, the government's lack of interest in long-term problems and basic research and preference for showy projects and applications research, the fact that relatively few government discoveries have been converted into civilian byproducts, the stifling of competition by cost plus contracts, the wasting of money and nullification of business independence sometimes attributable to federal representatives and auditors, and the fact that the net operating profits allowed by the government are small compared to those possible in private enterprise. Government is remolding business in its own, stable image, but it doesn't contribute to growth. Private enterprise must simply do creative R. & D. separate from government participation and control.

COMMUNICATION RESEARCH
THEORETICAL ANALYSIS

Hovland, C. I., Janis, I. L., & Kelley, H. H. *Communication and persuasion.* New Haven, Conn.: Yale University Press, 1953. (III, I, II, IV; Disseminating information, Communicator, Opinion change)

The study of the effectiveness of communication has become a subject of major interest in human relations research. The growing interdependence of ever larger numbers of people along with advances in the techniques of transmitting communication have led to a high degree of reliance upon mass media to convey information to various types of public and thereby mold their convictions. The authors' purpose in this volume is to study ways in which words and symbols influence people, to identify and understand major communication variables, and to provide an initial framework for subsequent theory building. The research task consists in the analysis of four factors: (1) the *communicator* who transmits the communication; (2) the *stimuli* transmitted by the communicator; (3) the *audience* responding to the communication; and (4) the *responses* made by the audience to the communication. Findings reveal that variations in expertness and credibility of the communicator seem to influence primarily the audience's motivation to accept the conclusions advocated; and that the positive *effect of high credibility sources* and the negative *effect of low credibility sources* tend to disappear after a period of several weeks. Content stimuli which are capable of providing strong incentives for acceptance of a new opinion and/or rejection of the original opinion held by an audience are identified as substantiating arguments, "positive" and "negative" appeals, "fear" appeals, group norms. It is generally recognized that people will react differently to the same social pressures; incentives can function adequately only insofar as the individual has the necessary motivational predispositions. The studies reported in this volume are concerned with *effects* of communication, but in several investigations the special aspects of active participation and duration of changes are analyzed. Emerging areas of research which require study before further progress can be made include: internalization processes, conflict and opinion change, perceptions-judgment-concept formation, and separating attention, comprehension and acceptance.

COMMUNICATION
EXPERIMENTAL STUDY

Hovland, C. I., & Weiss, W. The influence of source credibility on communication effectiveness.

Public Opinion Quarterly, 1951, 15, 635–650. (III, IV; Opinions and attitudes in change, Utilizing information)

This article is a classic study on source credibility. The same message was given to different groups using sources with given high and low credibility. Results indicated: (1) no difference in amount of factual information retained immediately after talk; (2) greater change in opinion in groups hearing more credible source; (3) a "sleeper" effect—in time groups began to disagree with credible source and agree with noncredible source.

INTRODUCING INNOVATIONS
SUGGESTIONS

Howard, Eugene. How to be serious about innovating. *Nation's Schools*, April 1967, 79, 89–90 & 130. (II, IV, III; Educational innovation, Adoption of innovation)

Six basic principles for educational innovation are given by the author from his own experiences and observations. A specific, written organizational philosophy should be followed consistently and used for evaluations of leaders' decisions. Programs should be built systematically and compared with the written goals, and they should involve and commit employees. Encourage an experimental attitude—allow mistake-making and information-gathering; evaluate progress systematically. Pace progress carefully, neither too fast nor too slow. Structure the organization to support (not fight) innovation. Do not confuse flexibility with sloppiness; individuals should be responsible for their decisions.

CHANGE AGENTS
SYNTHESIS/RECOMMENDATIONS

Huessy, H. R. Mental health consultation in varied settings. In *Mental health with limited resources: Yankee ingenuity in low-cost programs.* New York: Grune & Stratton, 1966. (III, II; Strategies for effecting change, Mental health consultation, Introducing innovation)

Mental health consultation can take place in a variety of settings. The author feels the ideal setup is where the consultant has no office but merely aids community workers coping with mental health problems. A consultation program should gradually reduce its work-load as consultees become trained. Consultants should have to do some direct work with patients and should have had a broad variety of clinical experience. Consultants should emphasize the contribution the consultee can make, and they should respect the consultee's professional competence. A consultant's job includes clarifying ways he himself can be of use. One of his most important functions is to broaden the horizons of the consultee and enable him to make his own decisions based on existing possibilities. Consultation involving support, encouragement, empathy with difficult situations, and some inservice education. Confidentiality in small towns and the value of consultation to the consultant himself are discussed.

EDUCATIONAL CHANGE
THEORETICAL ANALYSIS

Hunt, Douglas W. The premise of change. *Bulletin of the National Association of Secondary School Principals*, 1963, 47 (283), 1–3. (IV; Evaluation of change, Opinions and attitudes concerning change, Strategies for effecting change)

The author states that change has always been present in American education. Dimensions of education have been: (1) reflecting the needs of society, (2) making education available to all, and (3) recently, emphasizing quality. It is suggested that advocators of change fall into three groups: (1) the subtraction group or those who advocate fully educating only the talented, (2) the addition group or those who advocate more teachers, schools, books, etc., and (3) those who advocate looking at the present system and goals, evaluating them and only then introducing basic changes. This third group holds the greatest potential for change as change is not necessarily progress.

COMMUNICATION
THEORETICAL ANALYSIS

Hyman, H., & Sheatsley, P. Some reasons why information campaigns fail. *Public Opinion Quarterly*, 1947, 11, 412–423. (I; Barriers to communication, Resistance to change, Disseminating information)

Even if all of the physical barriers to communication were known and removed there would remain many *psychological barriers to the free flow of ideas.* Therefore, just increasing the flow of information will not guarantee the success of a campaign. In the public there exists a hard core of people who tend to have little or no information about any number of events, regardless of the availability of information about many of the events. On the other hand, interested people, those who for various reasons are motivated to seek and digest information, are the best informed. The study showed that people tend to seek information that agrees with their existing attitudes, that as a result the same news item will be interpreted differently by various people, and that information will often fail to change attitudes for the same reason. It is for these reasons that the author stresses the usefulness of opinion polls to gauge the national interests and attitudes. Skilled opinion research can reveal major factors affecting public opinion on the issues, and the relative influence of these various factors in determining attitudes. An effective opinion poll reveals how many people have been reached by certain information, and more importantly, which particular groups have not been reached. The author maintains that, in order to distribute more information, an understanding of the psychological barriers to information dissemination must come first.

RESEARCH DIFFUSION
CONFERENCE REPORT

Jacobson, Paul B. The use of inter-institutional agencies in the dissemination and implementation of educational research. In K. Goldhammer & S. Elam (Eds.), *Dissemination and implementation: Third annual Phi Delta Kappa symposium on educational research.* Bloomington, Ind.: Phi Delta Kappa, 1962. Pp. 129–170. (III, I; Educational innovation)

The paper reports part of a symposium on dissemination and implementation of research results, a symposium which often tried to define problems about which research should be done. These research results would then lead to further conferences on utilization of these results. A program of in-service training for educators analogous to that for doctors was proposed, hopefully on as wide a scale as possible. School administrators are especially in need of this sort of training. Universities are not currently equipped to offer this sort of training, but this lack could be overcome by large-scale cooperative activity on approaches to research.

PROMOTION OF UTILIZATION
CONCEPTUAL MODEL

Jain, N. C., & Amend, E. A conceptual framework for studying communication patterns in research dissemination and utilization. Paper prepared for the 17th Annual NSCC Conference, Cleveland, Ohio, April 1969. (III, I; Communication, Use of groups for research utilization, Disseminating information)

There is need for a framework for analyzing the communication processes and patterns involved in disseminating and utilizing research results. Three social systems are discussed with respect to information handling: the research system, which develops research findings; the linking system, which disseminates findings and promotes their use; and the client system, which applies research results to problem-solving behavior. Each social system handles information by inputting, processing, and outputting. This framework of communication patterns can be visualized as a 3 x 3 matrix (3 types of information handling by each of 3 social systems). The framework can be used to generate meaningful research questions, examine the interdependence of parts of the matrix, guide literature searches, identify gaps in communication patterns, and guide formulation of the informational basis for empirical research.

ORGANIZATIONAL CHANGE
THEORETICAL ANALYSIS

Jasinski, Frank J. Adapting organization to new technology. *Harvard Business Review,* January-February 1959, 37, 79–86. (IV; Characteristics of organizational structures, Adaptation to change, Planning for change, Change process)

Frequently the traditional, formally defined vertical relationships in business and industrial organizations prove inadequate to deal with modern technology. New technologies require new organizational setups and it is being found that industrial processes require horizontal and diagonal relations which are not patterned or clearly defined. Such lack of clarity can impair the production process. The work flow can create difficulty where the vertical lines are strongly emphasized and where the flow violates those lines. But when the formal organization is permissive, nonformal relations in the horizontal and diagonal planes arise to cope with the technological process. What is needed is a systematic analysis, by management, of technologies and organization to: (1) examine the work flow of the technology to determine what relations are required; (2) identify the points where the formal organization does or does not meet these requirements; (3) discover existing informal relationships; (4) determine how much formalization has occurred to cover relationships beyond traditional vertical lines; (5) divide which nonformal relations might be profitably formalized; and (6) provide measures to facilitate the nonformal relations which are still required but which may best remain informal.

PROCESS OF CHANGE
BARRIERS TO CHANGE

Jenkins, David H. Force field analysis applied to a school situation. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 238–244. (IV; Model for change, Organizational and institutional change)

Social engineering methods (specifically, force field analysis) can and should be applied to situations where you wish to establish and maintain innovation. The existing situation should be analyzed, keeping in mind the forces for the status quo and those for and against change. Change comes about through strengthening forces for change, or inhibiting or changing the direction of restraining forces. The forces to be modified should be chosen carefully; some can be more easily changed than others. The modification should be carried out, and the new condition stabilized by continued support of the modification.

ORGANIZATIONAL CHANGE
FIELD STUDY

Jenks, Robert S. An action research approach to organizational change. *Dissertation Abstracts*, 1967, 28, 1127–1128. (IV; Opinions and attitudes during change, Planning for change, Organizational climate for change)

This study is concerned with the development, *testing and application of a research instrument designed for use in organizational settings.* The instrument is designed to be used in a particular kind of social science field application called *action research.* It is designed to be used as an integral part of organizational change and development efforts. Various approaches to organizational change are examined and evaluated in terms of the kinds of change they bring about. Leavitt's so-called "people approach" is chosen as appropriate because it is based on bringing about organizational change by changing the interpersonal relations of the organization's members. Something which is most helpful in bringing about change in interpersonal relationships is *systematic data about the relationships.* The organizational Q-sort instrument was designed and developed to provide such systematic data for face-to-face work groups. The development and pilot testing of a 50-item Q-sort instrument, which gathers and organizes data concerning perceptions of behavior and feelings regarding a particular problem facing a work group, is described in detail. The application of the instrument in an organizational field setting is examined and evaluated in terms of: (1) the usefulness of the instrument, (2) the extent to which it is a meaningful part of an organizational change and development project, and (3) the results obtained. The results are given both *quantitatively* (by means of statistical analysis) and *qualitatively* (by means of content examination in three categories: characteristic, uncharacteristic, and discrepant). The impact of the results in the organizational setting is examined. Further development possibilities of the instrument are discussed.

EDUCATIONAL DIFFUSION
CASE STUDY ANALYSIS

Johansen, L. N. *Report of Title III program.* Schulte Elementary School, Sturtevant, Wis. (I, III; Disseminating information, Educational innovation)

The process of innovation is slow. An intensive 8-week summer laboratory for reeducating teachers, followed up by continuing support for innovation, showed disappointing results when evaluated 6 months and even a year later. The summer session was repeated for 2 more years, and after the second and third years more tangible results were found. Ideas are assimilated and discussed at the summer labs, explored in detail later (primarily by onsite visits), and finally implemented.

EDUCATIONAL INNOVATION
SURVEY/RECOMMENDATIONS

Johnson, Donald W. Title III and the dynamics of educational change in California schools. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 157–182. (II, IV, III; Strategies for funding agencies, Planning for change)

The effects of Title III of the NDEA on California schools was studied by 1,507 questionnaires (98.8% of all such programs). Title III made possible better teaching of more students in science, math, and modern foreign languages, and has been part of a general change pattern and emphasis on these areas. Curriculum development, acquisition of equipment, expert consultation, countrywide and Statewide coordination of services have resulted from Title III. All of this has been accomplished without adversely affecting other subject areas. Inservice training programs were not seen to be effective; administrators tended to attribute better teaching to the recruitment of better trained teachers. Teachers opposed to a given change could usually obtain and test out alternates, which led to increased involvement of teachers, both in depth and in numbers, and enrichment of instructional equipment and materials available. Administrators felt somewhat overloaded as a result of Title III, and some felt that money had been taken from other subject areas. Legislative encouragement of better teaching should require financial investment by schools to demonstrate their commitment, and rewards by means of assistance in equipment and materials acquisition.

RESEARCH NEEDS

COMMISSION STUDY

Joint Commission on Mental Illness and Health. Research resources in mental health. In *Action for mental health.* New York: Basic Books, 1961. Pp. 193–224. (I, III; Researcher-practitioner gap, Mental hospital innovation)

The chapter presents recommendations for a national mental health care program, based on a monograph by Dr. William Soskin, with additional comments by others. Mental health research has been widely diversified, on many levels and by researcher background; and the differentiation between basic and applied research has been emphasized. Most research has been done at a few universities, by psychologists, not psychiatrists. Areas of basic and applied research are identified in detail. Funding for this research has come mostly from NIMH. Implicit NIMH policy for granting funds is discussed. Implications of university research include too-specific focus of research, dislocation of university functions to allow research, uneven national distribution of funds, and wide research-practitioner gap. Other research enterprise issues include the depth of the split between researchers and practitioners, the need for public acceptance of undramatic progress in mental health research, and the over-dependence of research on federal funds. Strategies for expanding and strengthening research include support for diversity of programs, efforts to increase researcher-practitioner contact, support for long-term research, and expansion and intensification of basic research.

RESEARCH-PRACTITIONER GAP

THEORETICAL ANALYSIS/ SUGGESTIONS

Joly, Jean-Marie. Research and innovation: Two solitudes? *Canadian Education and Research Digest,* 1967, 2, 184–194. (III, I; Educational diffusion)

Is there really a delay in the application of educational research results to practice? The article offers suggestions for shortening the delay and principles to keep in mind concerning the nature of education when trying to bridge a gap, based on the author's experience and observations. There is a definite gap; how deep it is depends on how research application is evaluated. The estrangement between researchers and educators may be unavoidable and even desirable. Good research is rare and more team efforts are needed. Experiments should be repeated to check reliability of findings. Education is responsive to moral and political pressures. Dialogue between researchers and educators is difficult due to researcher's specialization and vocabulary. Educators and researchers have divergent interests, mutual mistrust and different languages—all of which guarantee a lack of communication. Three solutions are offered: use researchers as consultants in team research to solve specific problems;

establish linking organizations; involve education students in learning, research and development. Principles to keep in mind are: research, development and dissemination are different jobs, leading respectively to understanding, practical procedures and adoption. All three are necessary to prevent faddism, make research usable, and give purpose to research and development efforts. Teachers need a knowledge of basic research. One person should only try to do one of the three jobs. An innovation should be adopted only after study of the effect of the innovation.

ORGANIZATIONAL CHANGE
THEORETICAL ANALYSIS

Judson, Arnold S. *A manager's guide to making changes.* New York: Wiley & Sons, 1966. (IV; Change agents, Organizational linkage, Strategies for effecting change)

Strategies are presented for a manager implementing changes in a business setting. A manager should clarify what is to be accomplished by a change and why, the value of the change, and the methods to be used. Change affects people in the ways they must alter their work habits, how they relate to their work, and changing established relationships with coworkers and with the organization. An individual's attitude includes his feelings about change in general; the extent of his insecurity, cultural beliefs and norms; his trust in his management, union, and work group; historical events relevant to the change; specific apprehensions and expectations; and how the change is introduced and implemented. Responses to change run from opposition to indifference to acceptance. Management should assess the resistance to change by weighing losses perceived by employees against potential gains. Resistance can be minimized by various techniques, from compulsion to involving workers in planning and implementing change. Persons with different organizational roles perceive change differently; originators will be optimistic and not objective, managers will be objective and their actions critical toward success or failure, supervisors will perceive difficulties rather than benefits, staff specialists will favor the change and be insensitive to psychological and social effects of the change. A systematic approach to change includes planning, communication, gaining acceptance, making the change, consolidation and followup. An organization must consider change as continuing and normal, make line managers and supervisors responsible for introducing and making changes, have a minimum of interference by senior management, and make task accomplishment paramount among managers and supervisors.

COMMUNICATION
SURVEY

Julian, Joseph. Compliance patterns and communication blocks in complex organizations. *American Sociological Review,* 1966, 31, 382–389. (IV; Characteristics of hospital discipline and communication)

Compliance involves the relationship between the different means of influencing behavior and the kind and amount of effect generated by these means. General hospitals were expected to have normative power structures; custodial hospitals were expected to have more coercive power structures. Three general hospitals (including one university hospital) and two custodial hospitals (a veterans hospital and a TB sanatorium) were studied to see if these expectations held true, and to see if patients demonstrated a more positive attitude toward general hospitals than toward custodial hospitals. Patients were interviewed about the frequency of the use of normative and coercive sanctions (persuasion is a normative sanction; the use of physical force is a coercive sanction,) the extent of the patient's negative, neutral or positive involvement in the organization, and obstacles to the contact and transmission of messages between patients and staff. Normative power was used in all five hospitals studied, with coercive sanctions employed more in the custodial hospitals. Most general hospital patients had a positive orientation toward the normative sanctions employed and perceived fewer communication blocks. Custodial hospitals may have had more communication blocks due to their orientation to control rather than involvement. Blocks probably occur more in organizations with high degrees of coercion and structure. Restriction of communication is related to the effectiveness of custodial hospitals, free communication to those exercising normative sanctions and low degrees of control.

CHANGE AGENTS
RECOMMENDATIONS

Jung, Charles C. The trainer change-agent role within a school system. Paper presented at Seminar of the Cooperative Project for Educational Development, Tarrytown, N.Y., Oct. 30, 1965. (III, IV; Planning for change, Strategies for effecting change, Education innovation)

A *trainer change-agent* would promote awareness in others of their roles in bringing about change within the system. A trained change-agent could help bridge the gap between teachers or school staff and experts, researchers, others who work with youth, school administrators, or pupils. The trainer change-agent could provide skills in the areas of problem-solving, interpersonal learning. He would function as an upper administrator to establish, evaluate, and modify training programs that will meet the needs and help solve the problems of the system. His background should be one of a professional educator with additional training in the behavioral sciences, evaluative research and role of trainer.

EDUCATIONAL INNOVATION
RECOMMENDATIONS

Jung, C., Fox, R., & Lippitt, R. An orientation and strategy for working on problems of change in school systems. Paper prepared for the Cooperative Project for Educational Development, Center for Research on Utilization of Scientific Knowledge, Ann Arbor, Mich., 1966. (II, III; Planning for change, Strategies for effecting change, Change agents)

The primary goal of the school system is learning; learning is enabling the child to use his resources to deal effectively with his environment. The five levels of the school system that influence achievement of this goal are: the pupil, his peer group, teachers and staff, administrators, and boards of education. To support a good learning environment the school system should: give the teacher a degree of autonomy to innovate, interact with the community, support a continuity of education for both teacher and pupil, facilitate the availability of resources, and identify the need for change. A change-agent team could aid the system in making contact with outside sources of knowledge and information. As an example of a strategy for planned change the Michigan Region Cooperative Project for Educational Development (COPED) program is presented. The plan involves the university and school in a relationship where information would be exchanged, the need for change could be identified, and collaborative research could be done.

EDUCATIONAL INNOVATION
THEORETICAL ANALYSIS

Jung, C., & Lippitt, R. The study of change as a concept in research utilization. *Theory into Practice*, 1966, 5 (1), 25–29. (I, III; Scientists as change agents, Promotion of utilization)

How can scientific knowledge be used to contribute to an orderly and creative process of planned change in education? The four key parts of this question were defined, education as learning in the context of the total school system; scientific knowledge as theory, research findings, and methodologies; planned change as the inclusion of basic problem-solving phases when adapting to an action concern; and utilization both as a process of information flow and a structure of individuals as researchers, developers, practitioners, consumers, and linkers. Scientific methodology can be adapted by practitioners to study the educational setting. General findings and specific diagnostic tools aid teachers in providing background information and in evaluating their classrooms. Administrators can use systematic diagnostic tools to assess their system and provide evaluative feedback. Collaboration is needed to use research for educational change. Social scientists can be especially useful for clearly defined tasks, including adapting methodology to create diagnostic and evaluative tools. Educators, linkers and researchers are needed for the utilization of scientific knowledge for planned change in education. Four kinds of needs exist in this field: the need for collaboration between researchers and educational practitioners, the need for universities and school systems to explore the use of new functions to support utilization, the need to identify, develop and make available training resources, and the need for research on the process and institutional structures of utilization, especially on retrieval of findings, deriving implications, skills for collaborating, training technology, and skills for field diagnosis and evaluation.

CLASSIFYING KNOWLEDGE
RECOMMENDATIONS

Kadushin, Alfred. Assembling social work knowledge. In *Building social work knowledge: Report of a conference.* New York: National Association of Social Workers, 1964. Pp. 16–37. (I; Gathering information, Classifying information)

Underlying research utilization is the organization of information. Information must be collected and sorted into fact and inference. The author proposes an inventory of social work knowledge for practitioners. Available knowledge is categorized as: (a) social policy and administration, (b) growth and behavior, and (c) social work methods. Ways of determining the different levels of validity of available knowledge are discussed. Systematic literature reviews under the control of some central group are feasible and worth doing, since they provide an information base and perspective on that information. This base can be used to evaluate new theories and guide new research.

ATTITUDES CONCERNING CHANGE
EXPERIMENTAL STUDY

Kamenske, Gloria L. Some personality factors in attitude toward technological change in a medium sized insurance company. *Dissertation Abstracts,* 1966, 26 (8), 4797–4798. (II; Technological innovation, Response to innovation)

This study was designed to investigate the relationship of dogmatism and anxiety to attitude toward change both before and after technological change was introduced into an insurance company in the form of an IBM 650 computer, and to investigate the relationship of dogmatism and anxiety to five possible measures of reaction to change after introduction of the computer. Attitude toward change remained constant after introduction. High dogmatism, high anxiety, and high dogmatism and anxiety in combination were found to be inversely related to a positive attitude toward change both before and after computer introduction. Concerning reaction to change, high dogmatism, high anxiety and high dogmatism and anxiety in combination were found to be related to feeling that the computer was disrupting, taking a long time to get used to the computer, and not liking very much the fact that the computer had been installed. In addition, high anxiety was found to be related to being less satisfied with the job after introduction of the computer. Exploring the relationship between several variables for all employees showed high education related to low dogmatism, being male, being older, having a positive attitude toward change, and being less satisfied with the job. Male supervisors were more pleased than female supervisors about installation of the computer, but nonsupervisory males were *less* pleased than females about installation of the computer. Women were found to be more anxious than men. Findings of theoretical interest are that both dogmatic and anxious employees not only have a negative attitude about the concept of change, but show some negative reactions to technological change when it is introduced in their work environment. Practical suggestions for company personnel officers are that the most preparation for technological change should be given to highly dogmatic, nonsupervisory, anxious, young women with 12 years of education or less. Also, attention should be given to nonsupervisory males, who welcome change but were not as pleased as other employees above the computer being installed after it was in. In addition, some attention should be paid to finding means to increase job satisfaction of male employees with higher education. These employees are likely to be valuable and in critical positions and their job satisfaction, although not directly related to technological change, should be of some concern to their company.

DISSEMINATION DEVELOPMENTS
ANALYSIS

Kaplan, Bert. Dissemination of primary research data in psychology. *American Psychologist*, 1958, 13 (2), 53–55. (I, III; Data use, Communication among researchers)

Micro-reproduction techniques, especially the Microcard, have wide implications for facilitating information flow in the field of psychology. Space and cost limitations on publication can be overcome and the problem of access to stored data and papers made simpler. Data are often only skimmed. Money for data collection is scarce. Many researchers could work on one set of data. The National Academy of Science's Committee on Primary Records has developed special categories of research data that could be most useful to others, and it has studied what the best organization of data publication channels might be. Workers in child development, for instance, are more interested in access to raw data than those in experimental psychology. Editorial wisdom must be exercised in the choice of data to be published. Types of publication arrangements are discussed, from researchers individually contacting microtext publishers to a journal combining paper-copy abstracts with supplemental extended papers on Microcards. There is need for an inexpensive Microcard reader. New solutions such as the use of Microcards are needed "if the information psychologists generate is to be retained, organized and utilized."

DISSEMINATING KNOWLEDGE
PROGRESS REPORT

Kaser, T. IDEA: Prescription for change. *Saturday Review*, June 1966, 68–69. (I, III; Promotion of utilization, Use of groups for change, Organizations as middlemen, Introducing innovation, Research-practitioner gap, Resistance to change)

The Charles F. Kettering Foundation has set up an education-action project IDEA (the Institute for the Development of Educational Activities) to actively promote change in the classroom by disseminating knowledge of promising educational innovations. A vast laboratory for educational research has been set up in Southern California with member-schools agreeing to deviate when necessary from general district policies. Once a new concept has proven its usefulness, it will be put into practice in many schools. Such schools will bridge the traditional gap which separates research from practice in schools. IDEA is dedicated specifically to breaking resistance to change in the classroom and plans to use special workshops and consultants to combat resistance. Other IDEA projects are discussed, such as a conference of students held in Washington, D.C., documentary films about educational innovations, and a survey to detect the American public's attitude toward innovation in the schools.

CHARACTERISTICS OF INNOVATIONS

THEORETICAL ANALYSIS

Katz, Elihu. The characteristics of innovations and the concept of compatibility. Paper presented at Rehovoth Conference of Comprehensive Planning of Agriculture in Developing Countries, Rehovoth, Israel, 1963. (II, III, IV; Adoption of innovation, Community communication, Model for change)

The characteristics of an "item" to be diffused affect its rate of adoption. Things diffuse faster than ideas. The more readily the uses and advantages of an item can be explained, and the more limited are its ramifications, the greater the probability of adoption. Highly pervasive items will be adopted more readily by those less bound by the norms of their social system. If an item can be adopted in installments and if its use can be reversed, it will be adopted more easily. Highly profitable items will be adopted readily. Items must be compatible with a potential user's values about risk and profitability. Some social systems prescribe adoption behaviors carefully; an item must fit the prescription in these systems, and information about adoption must be addressed to the appropriate social units. The social system's structure of information distribution can help or hinder the flow of innovational information. Social systems serve as pools of shared values, units of adoption, networks of communication, and allocators of differentials in social role, social control and social support.

ADOPTION OF INNOVATION

EMPIRICAL STUDY

Katz, Elihu. The social itinerary of technical change: Two studies on the diffusion of innovation. *Human Organization*, 1961, 20, 70–82. (III, I; Process of innovation, Change agents)

There is a need to study the dissemination and adoption of a practice over time and through specific channels of communication within a social structure. Two practices were studied: the use of hybrid seedcorn by farmers and the use of a "miracle" drug by physicians. Each practice centered on a specific product, was important to the group studied, produced rapidly visible results, could be adopted in installments, and had potential economic advantage. The interpersonal communication network was important to dissemination; early adopters were conservative in their use of the innovation, but later users could depend on their accumulated experiences; availability of information did not insure adoption; salesmen provided initial information but interpersonal contacts were significant sources of information and legitimating; early adopters were those with regular contact outside the interpersonal circle; farmers adopting early belonged to formal organizations, while physicians were integrated into informal discussion networks; early adopters were less tradition-bound, younger and more affluent.

DIFFUSION OF INNOVATION
ANALYSIS

Katz, E., Levin, M. L., & Hamilton, H. Traditions of research on the diffusion of innovation. *American Sociological Review*, 1963, 28 (2), 237-252. (II, I; Adoption of innovation, Processes of innovation, Channels of communication, Linkage)

The process of diffusion is defined as the (1) acceptance, (2) over time, (3) of some specific item—an idea or practice, (4) by individuals, groups or other adopting units, linked to (5) specific channels of communication, (6) to a social structure, and (7) to a given system of values, or culture. The elements of this definition are treated as an "accounting scheme" in terms of which diffusion studies in the fields of sociology, anthropology, rural sociology, mass communication, etc., are reviewed and problems of research design are explicated. The authors attempt to present an overview of the basic elements of the process of diffusion, and to indicate, with respect to the accounting scheme, where each of a variety of research traditions has contributed as well as where each has fallen short. In addition, the authors specify problems which deserve further study: (1) the dependent variable which they call *acceptance* must be more clearly defined; (2) the notion of "compatibility" between a given *culture* or personality and an item must be formulated much more strictly; (3) considerable ingenuity is needed to date the acceptance of innovations by their adopters, for *time* is the key to diffusion research; (4) work is urgently needed on the comparative study of the same item diffusing in different *social structures*; (5) interpersonal *channels* of communication must be viewed as elements of social structure.

PROMOTION OF UTILIZATION
ANALYSIS

Kecskemeti, Paul, *Utilization of social research in shaping policy decisions*. Santa Monica, Calif.: Social Science Department, Rand Corporation, 1961. (I; Communication theory, Barriers to utilization, Promotional dissemination)

In general three ways in which scientific theory and research can be used for the purposes of formulating and "informing" governmental policy are: the "discipline" approach, "project" approach, and the indirect and informal approach. The author maintains that the major avenue toward the policy application of research in the newer social sciences is the project approach (scientific knowledge acquired with a practical goal in mind). The basic issue involved in the problem of the utilization of social research for governmental policy is an illusion that the natural-science standards of rigor, objectivity and quantification applied to the social environment will yield the same degree of theoretical understanding as natural science provides with regard to the material environment. The knowledge of the humanist, the philosopher, the artist, the religious believer is needed to "inform" policy, and to inform the thinking of those on whom the shaping of policy ultimately depends—the people at large.

OPINIONS AND ATTITUDES IN CHANGE
EXPERIMENTAL STUDY

Kelman, Herbert C. Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, 1958, 2, 51-60. (II; Adoption of ideas)

A study was made to determine the processes leading to three types of acceptance of an idea: compliance (adoption to achieve a favorable reaction from a person or group), identification (adoption to establish or maintain a satisfying self-defining relationship with a person or group), and internalization (adoption because the induced behavior is intrinsically rewarding). Negro college freshmen heard tape-recorded arguments in favor of maintaining all-Negro colleges even if the Supreme Court rules that segregation is illegal. (The study was made in 1954 just prior to the Supreme Court's decision to this effect.) The tape was presented by one of four persons purporting to fill various roles from the president of a Negro college association to a white southern "ordinary citizen." A control group heard no tape at all. Preliminary testing indicated that there would be a large negative response to the tape. After presentation, subjects filled out an attitude questionnaire under varying degrees of surveillance and salience. The experimenter felt his three hypotheses were supported: compliance was associated with communicators whose power was based on means-control, and the adopted ideas will tend to be expressed only under condition of surveillance by the communicator; identification was associated with attractive communicators and the adopted ideas will tend to be expressed only under conditions of salience of the subject's relationship with the communicator; internalization was associated with credible communicators and the adopted ideas will tend to be expressed under conditions of relevance of the issue, regardless of surveillance or salience.

OPINIONS AND ATTITUDES IN CHANGE

THEORETICAL ANALYSIS

Kelman, Herbert C. Processes of opinion change. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 509–517. (II, IV; Strategies for effecting change, Change agents, Characteristics of persons in change)

Opinions change by one of three processes: compliance, identification, internalization. Six considerations are named: the basis of importance of the change, the source of power to influence, the manner of making the change, the conditions of performance of the induced response, the conditions of change and extinction of the induced response, and the behavior system where the induced response is embedded. A change induced through compliance is concerned with the social effect of behavior, and it is induced by someone exercising means-control, by the limitation of choice behavior. The behavior will be performed under surveillance and will be embedded in behavior patterns cued to external demands of a setting. It will be changed through changed perception of the conditions for social rewards. A change induced through identification is concerned with the social anchorage of behavior, and it is induced by someone attractive, by his delineation of role requirements. The behavior will be performed under conditions of salience of relationship to the inducing person or group and will be a behavior involved in the expectations defining a specific role. It will be changed through changed perceptions of conditions for satisfying self-defining relationships. An internalized change is concerned with value congruence of behavior, and it is induced by a credible person by reorganizing the means-ends framework. The behavior will be performed under conditions of changed perception of values related to the issue and will be part of a person's value system. It will change as the person perceived changed conditions for value maximization.

PLANNING FOR CHANGE

FIELD STUDY

Key, William H. Controlled intervention: The helping professions and directed social change. *American Journal of Orthopsychiatry,* 1966, 36 (3), 400–409. (I, III; Resistance to change, Process of change, Community action programs)

Clinical and social scientists can have an important role in coping with the effects of social change if they can translate knowledge into terms specific to the problems, develop new methods of intervention, and develop new role models for professional-client relationships. This paper is a report on the philosophy and methods of two experiments in this field. The author attempts to develop an understanding of the psychology of the poverty-stricken and a program of controlled intervention in their lives. This intervention aims to improve their ability to cope with stress and crisis. If we are to be involved (as the author feels we must) in the management of planned social changes, it is incumbent upon the social scientist to develop a set of principles and an expertise in the application of those principles which are as fruitful in a community setting as the present principles are in offices and institutions. To develop principles, we need to experiment in our communities, which are an important laboratory of social science.

EDUCATIONAL INNOVATION

ANALYSIS/RECOMMENDATIONS

Kimbrough, Ralph B. Power structures and educational change. In E. L. Morphet & C. O. Ryan, *Planning and effecting needed changes in education.* Englewood Cliffs, N.J.: Citation Press, 1967. (IV, II; Strategies for effecting change, Community cooperation)

Educators, especially superintendents, must become involved in politics and learn to use the local power structure for educational change. The author discusses four types of power structures. Monopolistic and multi-group non-competitive power structures tend to be closed systems. The author hypothesizes that competitive elite and pluralistic power structures are open systems. Influentials, leaders, and politically active citizens crystalize the system's communication channels. Educators must become part of this group, so that leaders are aware of the conditions and needs of education, and so that educators know the "procedural norms" for getting things done. The author recommends that (1) goals be clearly formulated and attainable before approaching the legislature; (2) leaders and influentials should be identified and approached before specific demands are made; (3) the educational system should be used as a resource for articulate political influence; (4) outside power inputs such as the USOE can be used to sponsor improvement in various ways; (5) political strategies using persuasion, personal commitment, and community involvement should be mapped out and used to attain educational goals; (6) the total governmental structure should be changed if necessary by educators participating as agents of good government. The paper concludes with specific recommendations for school superintendents on necessary alternatives for approaching various systems.

OPINIONS AND ATTITUDES IN CHANGE

SUGGESTIONS

King, Martin Luther, Jr. The role of the behavioral scientist in the civil rights movement. *American Psychologist,* 1968, 23 (3), 180–186. (III, I; Resistance to change, Process of change)

For social scientists, the opportunity to serve in a life-giving purpose is a humanist challenge of rare distinction. If the Negro needs social science for direction and for self-understanding, the white society is in even more urgent need. White America needs to understand that it is poisoned to its soul by racism and the understanding needs to be carefully documented and consequently more difficult to reject. Dr. King suggests three areas of research because they have an urgent quality in which the behavioral scientist could make a major contribution. Cited is the gap in research (there are no studies) to explain adequately the absence of

Negro trade union leadership. A second area for scientific examination is political action (it has been suggested that Negro politics will accomplish only limited objectives); if the main thrust of Negro effort has been, and remains, substantially irrelevant, we may be facing an agonizing crisis of tactical theory. A third area for study concerns psychological and ideological changes in Negroes; new trends are appearing in Negro thought. Social science is needed to explain where this development is going. At issue is a question of whether the Negro is moving away, not from integration, but from the society which made it a problem in the first place. Needed is an understanding of how deep and at what rate of speed this process is occurring.

DIFFUSING INFORMATION

DESCRIPTION

Kinkade, R. G., & Van Cott, H. P. *Science information requirements of scientists: The use of an information clearinghouse by biological scientists.* Technical Report 1. Washington, D.C.: American Institutes for Research, November 1967. (III, I; Classifying information)

This article reports on the actual use made of an information clearinghouse by biological scientists. Most wanted copies of documents; the rest wanted information about experimental findings or methodology. Articles requested from the clearinghouse had both content and product descriptors. Content descriptors designate an area of interest; product descriptors define the form and acceptable time-lag for information. Articles published in the previous 3 years were requested 50 percent of the time; articles from the 15 years prior to that comprised most other requests. An acceptable time-lag for filling requests was about 2 weeks (except for those few desiring an article within 24 hours). A mail-order service to provide whole documents might well be satisfactory to a majority of scientists.

GATHERING INFORMATION/ KNOWLEDGE

THEORETICAL ANALYSIS

Kistiakowsky, G. B. Allocating support for basic research—and the importance of practical application. *Bulletin of the Atomic Scientists*, February 1966, 12–18. (II; Research-practitioner relationship, Research cost-benefits)

The author indicates that a serious danger of the present condition in science is the spread of the idea that basic science can be planned in detail, and that money need be allocated only to specific topics to provide the necessary scientific knowledge for the advance of technology. Unfortunately, it does not work this way. Technological developments historically most often came from disconnected discoveries in pure research. Yet basic research has only about 100,000 active scientists of a total of two million; it receives ten percent of the total funds. More basic research is needed in all fields, including the behavioral sciences. Much of this is "small research" done in universities with limited equipment; the average cost may be about $20,000 per researcher. "Big science," which costs substantially more may have more limited value and should be examined carefully. Mission-oriented research undertaken by government and industry is limited in value. Though basic research does not have a predictable value, the main justification for Federal support on the present scale lies in the practical applications of benefit to the nation.

COMMUNITY COOPERATION

CASE STUDY ANALYSIS

Klein, Donald C. Sensitivity training and community development. In E. H. Schein & W. G. Bennis (Eds.), *Personal and organizational change through group methods.* New York: Wiley & Sons, 1965. Pp. 184–200. (IV; Use of groups for change)

The report is a case study of the use of sensitivity training to reduce ill-will among townspeople to a local company. The author was requested, as a consultant, to open channels of communication between community leaders and management. A group of twelve community leaders was formed to evaluate the situation, and communication between management and these leaders helped reduce local hostility. In fact, company interest in the community situation, along with simply bringing the problem into the open, helped reduce local hostility. Sensitivity training was felt to have greatly benefited the community leaders in their participation in civic affairs, although there has been conflict between these "process-oriented" people and the untrained "task-oriented" people interested only in results.

STRATEGIES FOR OVERCOMING RESISTANCE TO CHANGE

THEORETICAL ANALYSIS

Klein, Donald C. Some notes on the dynamics of resistance to change: The defender role. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 498–506. (IV, II; Resistance to change, Change agents, Response to innovation)

Opposition to change in complex social systems may be desirable, and change should be studied from the viewpoint of its opponents. A major change, which may threaten parts of a group, must be desired if it is to be accepted. Opposition to change, even if irrational, may reflect realizations that "old preconceptions do not fit present reality." Change agents are often outsiders with suspect motives, who tend to distrust their opposition. ". . . Social systems seek ways in which to (maintain their integrity and) defend themselves against ill-considered and overly precipitous innovations." Defenders embody basic community values presumably needed to maintain the culture, so a change agent should try to understand the defenders' point of view and perhaps modify the change itself or his method of introducing it. Defender-change agent conflicts can extend to where both sides lose essential values. The school superintendent must balance his role between defender and change agent.

PROMOTION OF UTILIZATION

DESCRIPTION ANALYSIS

Klein, Helen D. The Missouri story, a chronicle of research utilization and program planning. Paper presented at the National Conference of Social Welfare, May 1968. (I, III; Middleman role, Adoption of innovation)

The conditions and impact of research utilization are discussed, based on the author's experience and knowledge. To be useful, a research concept must be translated into lay language, its implications must be stated clearly, the findings must be sound, the applicability of the findings must be unquestionable, there must be forceful professional leadership in dissemination, and the entire staff of those familiar with the findings must disseminate information on the grass-roots level. Clear factual presentations of the benefits of one mental health care system over another will lead to adoption by the public and legislators. In general, research results are most readily adopted if they are presented in lay language, if they are powerful and pertinent, if implications for practice are given, and if results are carefully introduced and/or summarized. The development of a pocket-sized scientific reader's digest to review interdisciplinary research was suggested.

ADOPTION OF INNOVATION
THEORETICAL ANALYSIS

Klonglan, G. E., & Coward, E. W., Jr. The concept of symbolic adoption: A suggested interpretation. *Rural Sociology,* 1970, 35 (1), 77–83. (I, II; Barriers to utilization, Utilizing knowledge, Rejection of innovation)

The authors suggest that the concept of "symbolic adoption" can be defined as acceptance of an idea rather than use of a material object or practice. Thus, by conceptualizing adoption as a two-stage process (symbolic and use), lag may be explained as an incomplete adoption process. Furthermore, the relative importance of variables affecting adoption may be understood more clearly if they are perceived as affecting either symbolic adoption or use adoption. Various reasons for rejection and discontinuance can also be explained by the concept of symbolic adoption.

DIFFUSION OF INNOVATION
EXPERIMENTAL STUDY

Klonglan, G. E., Coward, E. W., Jr., Beal, G. M., & Bohlen, J. M. Conceptualizing and measuring the extent of diffusion of innovations. Ames, Iowa: Department of Sociology and Anthropology, Iowa State University, Journal Paper No. J–6061, Project No. 1529, 1970. (I; Adoption of innovation, Response to innovation, Diffusing of information, Utilizing information)

This paper discusses a new approach to conceptualizing and measuring the extent of an innovation's diffusion. Typically, in assessing the extent of an innovation's diffusion, researchers have focused on the proportion of adoption units who are adopters, or users, of the innovation. The authors discuss an alternate procedure in which extent of diffusion is analyzed by considering the proportion of adoption units who have completed each step of the adoption process. From these proportions one can construct an extent of diffusion line and an extent of diffusion index. The paper illustrates the applicability of this approach in comparing changes in extent of diffusion over time and in comparing the extent of diffusion of two or more innovations at a similar point in time.

ADOPTION OF INNOVATION
CASE STUDY ANALYSIS

Klonglan, G. E., Yarborough, P., & Lutz, G. M. *Diffusion of fallout shelter innovations.* Ames, Iowa: Department of Sociology and Anthropology, Iowa State University, Rural Sociology Report 81, 1970. (II; Processes of innovation, Rejection of innovation, Diffusing information, Change agent)

This report of the adoption and diffusion of public and home fallout shelters was based on 1968 data as compared to data from 1966 and 1964. The focus is on the adult actor in a situation which includes: the problem (threat of nuclear war); the innovation (fallout shelter); the change agent (Office of Civil Defense); the information inputs. Adoption is a decision-making process having the following stages: unaware, aware, information, evaluation, trial, and adoption or rejection of the innovation. The diffusion was found to be 46.5 percent complete with a large change between 1964 to 1966 and no change from 1966 to 1968. To complete diffusion a number of discreet audiences, in various stages have to be reached: unaware, having unfavorable dispositions toward public shelters; aware, information, and evaluation, all having favorable dispositions toward public shelters; adoption, having most favorable disposition toward public shelters; rejection, having generally favorable dispositions but hard to reach by the usual communicative efforts. The target audience for the OCD should be those in aware, information, evaluation and adoption stages.

UTILIZING INFORMATION/KNOWLEDGE

SUGGESTIONS

Knoerr, Alvin W. The role of literature in the diffusion of technological change. *Special Libraries*, May-June 1963, 54, 271–275. (I; Gathering information, Diffusing knowledge, Promotion of utilization, Technological change)

Technical literature constitutes a great stimulus to progress today, particularly because much of the work classified as "research" is nothing more than searching for remote or related ideas that have already been set down in print. The author, using examples drawn from the field of mining, attempts to define "the literature," list current sources, and show how this literature influences technical progress. He advocates: (1) a good company library serving as the gathering and dispensing place for technical literature; (2) a required reading program in which all potential management candidates participate; (3) regular deadlines to evaluate all ideas that might be applied to advantage in company operations; and (4) a program adopted by management to place these ideas in action.

BARRIERS TO UTILIZATION

DESCRIPTION/ANALYSIS

Kogan, Leonard S. The utilization of social work research. *Social Casework*, 1963, 44, 569–574. (I, III; Adoption of innovation, Rejection of innovation, Research-practitioner gap, Utilizing knowledge, Resistance to change, Organizational climate for change)

Some successes and failures in research utilization of studies by the New York Institute of Welfare Research are outlined. A bibliography on Movement Scales is in use on a wide scale. Also, a study of an office floor plan was utilized immediately. However, a study on improving case records was not used for several years and a vastly better method of referring patients to other agencies was ignored. The author suggests general reasons for nonutilization: (1) nature of the research and the research report, i.e., ambiguity, dubious quality of the research, overly technical language; (2) user either may not desire change or have power to effect change; (3) lack of cooperation between researcher and user; (4) organizational environment.

PLANNING FOR CHANGE

SUGGESTIONS

Kurtland, N. The effect of planned change in State departments. *Theory into Practice*, February 1966, 5 (1), 51–53. (IV; Process of change, Strategies for effecting change, Organizational change, Educational change)

State departments of education are not traditionally equipped for leadership, nor have they assumed leadership positions. Under the Elementary and Secondary Education Act, 1965, however, they have been given the role of administrators of major changes in education. It is suggested that some of the inhibiting factors in State departments of education could easily be adapted to a new role of leadership. A usually neglected close relationship to the State legislature can be utilized positively to influence fund allocation, laws on certification and classroom standards, and school district reorganization. The regulatory role can be set positively to raise standards, determine curriculum and, by relaxing regulations, encourage inventive new projects. Suggestions for organizing for change include the following: (1) free some staff members to become future planners; (2) provide for increased flow of information from field to department and vice versa, so current and long range decisions will be based on accurate data; (3) encourage the design of programs to meet long range needs as they are identified; and (4) arrange for the dissemination of desired new programs, either through the information system, or a system of its own.

ORGANIZATIONAL FACTORS INVOLVING INNOVATION

DESCRIPTION/ RECOMMENDATIONS

Lancelot, Y. Staff training as an integrating factor in agency structure. *Public Welfare,* 1964, 22 (4), 263–268. (II, IV; Organizational and institutional change, Adoption of innovation, Diffusing information, Use of groups for change)

Staff training and development must be attuned to existing as well as new theoretical developments, and must be imaginative in the means by which these developments can be integrated with the program of the agency. Training can serve as a useful communication mechanism between staff and administration. Group methods have been especially useful in promoting communication. In public assistance and child welfare agencies emphasis should be on an across-the-board focus on children and their needs, regardless of category and division, and should serve to develop an appreciation for the generic goals and philosophy of the agency.

RESISTANCE TO CHANGE

THEORETICAL ANALYSIS

LaPiere, Richard T. Adoption and the adopter. In R. T. LaPiere, *Social change.* New York: McGraw-Hill, 1965. Pp. 174–212. (II; Barriers to utilization, Rejection of innovation, Response to innovation, Characteristics of innovators, Adoption of innovation)

This chapter is an analysis of adoption from a historical viewpoint. Irrational as well as rational reasons for resistance to change are outlined. Irrational reasons include fear of the unknown, moral or religious tenets, aesthetic values, or elaborate rationalizations such as resisting train travel because of the belief that the human body could not survive traveling 30 miles per hour. Rational reasons also exist for resistance since vested interests and status may be threatened by the innovation. Organizations may even arise to combat innovation; witness the Ku Klux Klan. Adopters are also characterized. The conservative and successful may resist change while those with nothing to lose or the upwardly mobile will often be willing to accept an innovation. An innovation may also take hold if prestigious individuals embrace its cause. The author maintains that no innovation, however extreme it may appear at first, truly revolutionizes the affairs of man.

RESISTANCE TO CHANGE

ANALYSIS AND SUGGESTIONS

Lawrence, Paul R. How to deal with resistance to change. *Harvard Business Review,* 1954, 32 (3), 49–57. (IV, II; Strategies for change, Organizational change, Planning for change, Change process)

People do not resist technical change specifically; they resist the accompanying changes in their network of human and social relationships as they perceive them. Therefore to overcome resistance to change Lawrence views the role of the administrator as primarily that of facilitating communication and understanding between people with different points of view. To meet this challenge, managers can try to influence staff personnel by: (1) broadening the interests of staff personnel; (2) asking them to use understandable terms when dealing with operators; (3) encouraging them to look at resistance in a new way (i.e., resistance not directed at technological change, but directed against the social implications of such changes); and (4) new definitions of the staff job, from idea generating to getting those ideas into practical operation (recognizing staff's need for cooperation and help from the operators).

MIDDLEMAN ROLE
THEORETICAL ANALYSIS

Lazarsfeld, P. F., Sewell, W. H., & Wilensky, H. L. (Eds.) Introductory chapter in *The Uses of Sociology*. New York: Basic Books, 1967. (I, III; Research-practitioner gap, Promotion of utilization)

The central focus of this volume is collaboration, or lack thereof, between clients and sociologists. The two central issues that the authors analyze are: (1) difficulties of translating practical issues into research problems and (2) unavoidable intellectual gaps between research findings and advice for action. The sociologist can play different roles, using a variety of resources, meeting various types of problems. Always, however, he must understand the client's problem. He must translate a practical issue into a research problem. He must also make the leap over the gap from knowledge to decision—action must follow. "As the role of the social sciences expands, a new profession might develop, a third force, a middleman who mediates between the sociologist and the client. He would be able to understand the social scientist and be well acquainted with the practical problems of the sponsor, but most of all he would have the talent and, hopefully, the training to take the knowledge which is delivered to him and to draw more conclusions from it than could either of the two partners upon whom we have concentrated so far. If his advice is carefully recorded and analyzed, then this itself would make contributions to the translation gap problem which, at the moment, is still the murkiest spot in the whole picture that this volume tries to paint." The conclusion suggests that studying and analyzing the communication pattern of effective consultants to organizations might provide insights to the change agent role.

COMMUNICATION RESEARCH
CASE STUDY ANALYSIS

Lee, I. J., & Lee, L. L. *Handling barriers in communication.* New York: Harper, 1957. (IV; Industrial communication, Process of change, Attitudinal change)

An industrial communications course was held for 28 supervisors and departmental personnel representatives at Illinois Bell Telephone Company. About 300 attitude studies were made of employees subordinate to those selected for the class; the interviewees did not know their supervisors were in training. More than 50 nondirective depth interviews were conducted before and after the class to determine if effects of training were present, noticed and long-lasting. Seventy-two percent of the postlecture interviews reflected improved communications or relationships. Twenty percent of those interviewed stated directly that they had noticed a recent difference either in attitudes or in procedures within their company. The presentation of the course given in this volume has grown out of a combined development in the fields of communication (raising problems of misunderstanding, conflict, confusion, prejudice and disagreement) and General Semantics (offering a method of clarifying these issues and pointing out linguistic pitfalls). The sets of exercises on the use of General Semantics are presented for use in similar classes.

ORGANIZATION FACTORS INVOLVING INNOVATION

DESCRIPTIVE ANALYSIS

Leeds, Ruth. The absorption of protest: A working paper. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 194–208. (IV, II; Strategies for effecting change, Process of change, Organizational change, Organizational development, Organizational climate)

The processes by which a nonconforming enclave within an organization can influence the total organization's objectives or values are described. An organizational technique for dealing with a group of nonconformists consists of integration of the nonconforming enclave into the organization by converting it into a legitimate subunit. A descriptive model of protest absorption has three parts: (1) the characteristics of the nonconforming enclave; (2) the state of the organization; and (3) the process of absorbing protest which consists of several steps. In this process the enclave is able to gain some power, the organization forms a new administrative unit which absorbs the enclave; the enclave demands and is granted further autonomy and resources, innovations take place; the enclave is surrounded by stabilizing factors and peace is restored. Major variables in the process include the degree of weakness of the organization, the strength of the nonconforming enclave, the power of the intermediary and the nature of the stabilizers. The protest absorption process can lead to a long-term chain reaction of major changes in the organization, as well as check nonconformity and introduce a particular innovation. The adoption of protest absorption as a conscious policy enables an organization to cope with nonconformity and to implement changes flowing upward from the bottom.

USE OF GROUPS FOR CHANGE

EXPERIMENTAL STUDY

Levine, J., & Butler, S. Lecture vs. group decision in changing behavior. *Journal of Applied Psychology,* 1952, 36, 29–33. (II, IV; Strategies for effecting change, Strategies for overcoming resistance to change, Opinions and attitudes concerning change)

A formal lecture method was compared with group decision in inducing 29 supervisors of 395 factory workers to overcome their biased performance ratings. Results showed that only the group of supervisors involved in group decision improved in their ratings. The lecture group did not change and persisted in overrating the more highly skilled workers and underrating the less skilled. The conclusion was drawn that group decision is more effective than the formal lecture in overcoming resistance to change in behavior.

PROCESS OF CHANGE

ANALYSIS AND SUGGESTIONS

Lewin, Kurt. Quasi-stationary social equilibria and the problem of permanent change. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 235–238. (II; Model for change, Organizational climate for change, Opinions and attitudes in change)

In analyzing the change process, three steps necessary for real change are postulated. First, an "unfreezing" of present attitudes and practices is necessary. Second, the organization or individual must "move" to a new mode of behavior, and third, "freezing" must occur at the new level. Without these three stages, change will only be temporary.

PROCESS OF CHANGE
THEORETICAL ANALYSIS

Lewin, K., & Grabbe, P. Principles of reeducation. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 503–509. (II, IV; Utilizing knowledge, Barriers to utilization, Resistance to change, Use of groups for change)

The authors analyze ways in which reeducation affects the individual, changing his cognitive structure, his values and motoric action. In attempting to change cognitive structures, one must remember that an individual's *perception* of reality may affect the way he accepts reeducation. Change should also be incorporated into the system of which the individual is a part. When the group accepts change, it will become easier for the individual to accept change.

ORGANIZATIONAL CHANGE
RECOMMENDATIONS

Leyendecker, G. A comprehensive staff development program. *Social Casework,* 1965, 46 (10), 607–613. (II, IV, I; Diffusing information, Educational diffusion, Barriers to utilization, Organizational climate, Use of group for change)

Staff development is an essential function of administration. Its goal is to improve the quality of services and to accomplish the work of the agency with increasing effectiveness. Achieving this goal means: (1) taking into account the learning needs of all staff members, (2) relating the program to the needs of a particular agency, (3) recognizing the need of total staff participation, and (4) expecting each individual to make continuous and effective use of the learning opportunities. Crucial phases of a staff development program in a rapidly changing society and the learning opportunities for recent graduates are outlined. Particular problems of participation in research are noted. Preparation of staff for educational and administrative responsibilities is considered an agency responsibility. Individual and group supervision are compared, and mention is made of joint interviews, one-way screen observations, tape recorders, and closed-circuit television as aids to staff development.

OPINIONS AND ATTITUDES CONCERNING CHANGE
EXPERIMENTAL STUDY

Liberman, Robert. Personal influence in the use of mental health resources. *Human Organization,* Fall 1965, 24, 231–235. (II, IV; Resistance to change, Characteristics of innovative persons, Attitudes toward community mental health resources)

Statistical techniques of relational analysis are used to elaborate the role played by personal influences in the decision to seek help with mental problems from community resources. Of 52 individuals who sought help 63 percent were influenced by another person in their choice of a particular resource. As contrasted to the influences, the influentials were older, less likely to be Protestant, more often of the upper socioeconomic class and higher in gregariousness. In addition the influentials tended to be more stable residentially and to have had more prior experience with mentally-ill family members. There was significant in-group flow of influence among males, Catholics, Jews, and upper and lower socioeconomic classes. Older individuals influenced younger ones and when personal influence crossed socioeconomic status boundaries it generally moved from higher to lower levels. A high degree of consensus between influencee-influential pairs was noted for their attitudes toward community mental health facilities.

COMMUNICATION DISSEMINATION
SUGGESTIONS

Licklider, J. C. R. A crux in scientific and technical communication. *American Psychologist*, 1966, 21, 1044–1051. (I, III; Disseminating information, Utilizing information, Selecting information, Research communication)

Fortunately it is the rate of "getting out of hand" and not the rate of overall growth of scientific information that is increasing. There are three ways this problem can be attacked: reduction in the rate of publication, improvement in the selection of documents, or improvement in the processing of information. Higher standards of quality in selected journals could aid in the selection of information but would also slow down the time new information could be released. There is little hope of improving traditional ways of indexing, abstracting, and bibliographing as the manpower will not be available. The answer seems to lie with the computers, but not just in programs of storage and retrieval of information. What is needed is man-computer interaction; this would allow the man to converse and explore with the computer the stored information. For this type of computer a digital code could be used for more compact storage and transmission of information.

PROMOTION OF UTILIZATION
CASE STUDY ANALYSIS

Likert, R., & Lippitt, R. The utilization of social science. In L. Festinger & D. Katz (Eds.), *Research methods in the behavioral sciences*. New York: Dryden Press, 1963. (II, III, IV; Change agents, Research-practitioner relationship, Strategies for effecting change, Utilizing knowledge)

The authors explore two areas in which resources in social psychology can be utilized by practitioners and the general public. First, knowledge and theory derived from research can be applied to an existing problem. For application to occur there must be motivation to use such resources and the relevance of the research must be recognized. The social scientist's role also is important. He must recognize the practitioner's needs and help the practitioner understand the methodology of research application. He can aid the practitioner by interpreting, planning and executing specific steps of action for him. The second area of research utilization is the direct application of research procedures to help solve an existing problem. The authors include a discussion of "Assuring Use of Research Results" within organizations and make suggestions, including: inducing cooperative rather than defensive attitudes, encouraging participation in planning of all concerned, presenting preliminary findings, encouraging the use of self-analytic techniques, enlisting support of top figures in the hierarchy and remeasuring research results.

EDUCATIONAL INNOVATION
THEORETICAL ANALYSIS

Lin, Nan. Innovative methods for studying innovation. In *Research implications for education diffusion*. East Lansing, Mich.: Department of Education, Michigan State University, June 1968. (I, II; Processes of innovation, Adoption of innovation, Educational diffusion, Evaluation of innovation)

Three ways in which the diffusion of innovations within an educational system are measured are, the measurement of time required for adoption of the innovation, the degree of adoption of the innovation, or the number of innovations adopted. To study these measurements a sample is drawn from the population and various questions are answered, by members of the sample, through recall. Questions include the adoption index as well as certain social and psychological variables thought to be important. The questionnaires are then analyzed to determine if a simple inter-correlation can be found between the dependent variable, innovativeness of the system, and the independent variables. The weaknesses of this type of diffusion study are a narrow focus, especially the dependent variable selection; reliance on the respondent's recall; focus of attention on the receiver; the research being a one-shot operation; and the analysis being mainly correlational. A good investigation of the diffusion of innovations in education should lead to a better understanding of education change. To build a stronger educational system, the investigation must pay attention to the decision-making process, investigate the gatekeeping process, find out how an innovation is implemented, and study the effects of the innovation. There are three methods which may widen the investigative operation to determine the processes which aid the adoption of innovation: (1) the field experiment method (with proper sampling and control over independent variables can achieve both generality and precision). (2) the computer simulation method (can give the investigator a structural view of the system, insight into the dynamic nature of the system, and inexpensive control over the components and rules of the system without the possibility of damage to it). (3) the structural analysis method (can provide information about the best processes for the dissemination of innovation within an educational system—the compatibility between the formal and informal structure of an educational system—and finally, changes that can be made in the educational system to implement innovations within the system).

EDUCATIONAL DIFFUSION
CASE STUDY ANALYSIS

Lin, N., Leu, D. J., Rogers, E., & Schwartz, D. F. *The diffusion of an innovation in three Michigan high schools: Institution building through change.* East Lansing, Mich.: Institute for International Studies in Education, Michigan State University, December 1966. (II; Educational innovation, Adoption of innovation, Organizational and institutional change)

This study includes a model of innovation dissemination within an institution which emphasizes *"awareness-adoption-internalization"* stages. The findings suggest that in any attempt to alter a teacher's change orientation, attention should be focused upon the interpersonal relationships of the institution within which the teacher is a member. It is to be noted that rate of adoption of the innovation (schedule modification) was not retrieved (1) because it was discovered only after administration of the questionnaire that the schools chosen for the study had to some extent imposed the innovation on the teachers, and (2) because the instrument did not specifically retrieve the length of time between the school's formal adoption of schedule modification and the teachers' actual use of it. Additionally, the instrument did not differentiate among (a) teachers who had been in the school at the time of formal adoption, (b) teachers who had adopted it at a school where they had been previously employed, and (c) teachers who had been hired after the formal adoption of the program (and the length of time before they actually began to use it).

RESISTANCE TO CHANGE
DESCRIPTION/CASE STUDY ANALYSIS

Lindemann, Eric. Social system factors as determinants of resistance to change. *American Jour-*

nal of Orthopsychiatry, 1965, 35 (3), 544–557. (IV; Process of change, Community cooperation)

Interpersonal and social system factors affecting the establishment of two mental health clinics during crisis situations are discussed. One clinic, established in a Boston suburb, was met with suspicion compounded from fear of devalued real estate, presence of undesirables coming for treatment, and unwillingness to admit they had problems. Adolescent delinquency (their crisis) was dealt with by establishing a citizen's committee with one consultant from the clinic. The other clinic was established in a working class district being broken up by urban renewal. Values of neighborhood loyalty and anti-intellectualism were upset, and attempted reunions in the old neighborhood failed to lead to coalitions of political power to prevent future crises.

MENTAL HEALTH AGENCY INNOVATION

PROGRESS REPORT

Linden, M. E., Appel, K. E., Davis, J. E., & Matthews, R. A. Factors in the success of a public mental health program. *American Journal of Psychiatry*, 1959, 116, 344–351. (II, IV; Organizational and institutional change, Diffusing information, Use of groups for change, Mental hospital innovation, Promotion of utilization, Community cooperation)

Many mental health programs have not lived up to expectations due to four major factors: (1) wide gaps and deficiencies among preventive, therapeutic and reconstructive services; (2) failure of cooperation and coordination between various autonomous agencies; (3) absence of definitive information about mental health needs and resources; and (4) lack of a centralized coordinating agency. The authors summarize reasons for the success of the Philadelphia regional mental health programs as follows: (1) excellent timing of the program coinciding with the peak development of interest and goodwill on the part of an informed public and dedicated governments; (2) intensified and continuous communication among popular representatives, professional staffs and political bodies; (3) creation of two important cooperative agencies, the Philadelphia division of mental health within the Department of Public Health and the State of Pennsylvania's office of the Commissioner of Mental Health within the Department of Welfare; (4) establishment and continuation of the Conjoint Mental Health Board; (5) creation and intensification of the programs of the reception center; (6) maintenance of continuous and perpetual statistical control over all aspects of the program; (7) constant application and initiation of various researches and surveys including program self-reevaluation; (8) attention to all of the community's mental health needs in a comprehensive program; (9) utilization of operational elements proven effective in other localities; (10) involvement of the lay and professional communities wherever possible; (11) encouragement of leadership at the lowest possible echelon of responsibility in the overall administrative pattern; (12) giving credit where due in public and press.

CHANGE AGENTS

QUESTIONNAIRES/ANALYSIS

Lippitt, Gordon L. A study of the consultation process. *Journal of Social Issues*, 1959, 15 (2), 43–50. (III, IV; Strategies for change agents, Processes of innovation, Planning for change)

This is an anecdotal analysis of questionnaires given to nurses who participated in a 2-week educational workshop. Some conclusions of the limited study were: the identity of the consultant responsible for continued contact with the client should be established as soon as possible; the consultant should make available time for individual consultation, but should be sensitive to the proportion of time spent with the client group's status figures; build up subgroup action to reinforce the relationship between meetings of the consultant and the client group; the consultant must work within the framework of the client group's background; consultation can improve the working relationships of an ongoing staff unit; discrete (rather than continuous) consulting relationships build independence and foster interest in self-training during the consultation process; goals change during consultation and may change too quickly to allow the client group to carry out an "activity" as part of the learning process.

ORGANIZATIONAL DEVELOPMENT
DESCRIPTION

Lippitt, Gordon L. Implications of the behavioral sciences for management. *Public Personnel Review,* 1966, 27 (3), 184–191. (IV, II, I; Use of groups for change, Process of change, Communication, Organizational change, Promotion of utilization)

In a search for solutions to organizational complexities, management is turning to the behavioral sciences (including cultural anthropology as well as psychology, sociology, and related fields) for guidance in satisfying man's needs on the various levels which prompt him to search for self-identification and self-realization. Research into dyadic relationships, group behavior, inter-group relationships, organizations and social systems is discussed. Communication, leadership, managing process, learning process, and processes of change are explored. Management development is stressed in a discussion of the implications of research studies, as is better utilization of behavioral science research findings by industry. A multi-disciplinary approach is recommended to the complex problems of today's management. The organization is described as a complex, open system that has multiple subsystems and functions and exists in a dynamic environment. A challenge is seen to both behavioral scientists and management to continue their search for understanding the complexities of today's organization systems.

CHANGE AGENT
THEORETICAL ANALYSIS

Lippitt, Ronald. Dimensions of the consultant's job. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 156–162. (III; Strategies for effecting change, Middleman role)

The function of an outside consultant in the change process is to temporarily aid a help-needing system (client) in solving a current or potential problem. The problem, its origin, and the forces which maintain it must be identified. The consultant needs a systematic theory, such as psychoanalytic theory, and a diagnostic theory, such as an inappropriate distribution of power or lack of communication within the system. The consultant should realize that his stimulation of change may seem manipulative, and he should consider individual, group, and institutional welfare when initiating change-making activities. The client's feelings about change must also be considered. The consultant should be able to provide continuing support of changes, and he should have training and therapeutic skills to match his diagnostic skill. He should relate to the total client organization, not to subgroups. The consultant should help the client by developing the need for change, clarifying the problem, examining alternate solutions, initiating and stabilizing changes, and ending the consultant relationship while establishing a continuity of change-ability. Successful consultation has three types of learning as end-products: the organization has learned to cope with its initial problem, it has learned to clarify future problems as they emerge, and it has learned techniques for maintaining organizational health.

PROMOTION OF UTILIZATION
MODELS

Lippitt, Ronald. The process of utilization of social research to improve social practice. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 142–146. (III, I; Linkage, Middleman role, Process of Utilization, Research-practitioner collaboration, Research diffusion, Introducing innovation)

Two types of patterns for utilization of social research are described: bringing into the science consumer system knowledge and validated practice from outside the system for use in solving problems, and developing scientific knowledge within the system in order to utilize it as a basis for improvement of practice. Three "extra" system patterns are: (1) identify the problem and retrieve information from outside; (2) conduct an extra-system feasibility test of a design procedure to meet some social practice issue; and (3) identify creative innovations by practitioners and diffuse them to other communities, agencies or organizations. Three "inner" system patterns are: (1) the organization and the researcher collaborate in collecting and analyzing diagnostic data which is fed back for sponsors' use; (2) applied scientists supervise self study to train local staff members to collect and process data, interpret the findings and spell out implications for change; and (3) consumers of scientific resources are educated by training in scientific methods and concepts and by laboratory courses in behavioral science in elementary school. Training of linking agents must include new skills needed for utilizing these six patterns.

EDUCATIONAL CHANGE
SYNTHESIS/SUGGESTIONS

Lippitt, Ronald. Roles and processes in curriculum development and change. In R. R. Leeper (Ed.), *Strategy for curriculum change.* Washington, D.C.: Association for Supervision and Curriculum Development, 1965. (I; Educational innovation, Model for change, Utilizing information, Planning for change)

The author presents a model for analyzing change in education and suggests how to establish an atmosphere for change, based on his experience and observations. The following were seen as problems in educational change: practitioners must change attitudes and values as well as skills and equipment; most innovations remain unknown to potential adopters; inventive teachers are surrounded by negative attitudes of colleagues; communication networks and change agents are significantly lacking; colleague relations inhibit invention; there is almost no creative interdisciplinary work between teachers and social science researchers; there is inadequate feedback to reinforce change efforts; administrators feel the community opposes experimentation in schools. The change process is seen as three phases; identification, development and diffusion, with feedback important to all three. There are four safe and effective educational levels where innovation can be implemented: classrooms, school buildings, school systems, and the community system level. Choosing the proper level for a particular innovation is important. The author concludes by outlining factors currently favoring change, including governmental action, development of resource libraries and retrieval systems, and the use of human aides as change agents.

EDUCATIONAL INNOVATION
RECOMMENDATIONS/SYNTHESIS

Lippitt, Ronald. Processes of curriculum change. In R. R. Leeper (Ed.), *Curriculum change: Direction and process.* Washington, D.C.: Association for Supervision and Curriculum Development, 1966. (I, III; Planning for change, Response to innovation, Evaluation of innovation)

A more active dialogue between students and adults is needed in the learning process. The author discusses six stages of curriculum development (beginning with the last) and the role of the curriculum change agent. Student use of new resources is determined by internal and external motivational supports, including perception of relevance to the student's values, self-evaluation of learning competence, peer group and family support, and curriculum materials. Teachers generally do not communicate among themselves or with students about the development, evaluation, and decisions on usage of new resources. Decisions should involve appropriate people, adequate relevance criteria, on-site testing of alternatives, and considerations about adaptation and inservice training. "Extension agents," publisher's agents, and teachers should all be encouraged to search for (or develop) new resources. Find out what innovations your own teachers, those from neighboring systems, and those abroad have developed. Distribute them widely and clearly. Curriculum change agents must link outside resources to the classroom, help define educational objectives, coordinate adaptation of materials, aid in-service training, and develop the support system necessary for each teacher.

RESEARCH-PRACTITIONER RELATIONSHIP
CASE STUDY ANALYSIS

Lippitt, Ronald. Two case studies of utilization of the behavioral sciences. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science,* Vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 20–35. (III, I; Research-practitioner collaboration, Research-practitioner gaps)

Two cases of the use of behavioral science by community organizations serve to illuminate the relationship between research and ongoing social programs. The author provides explicit descriptions of situations and issues that arise in the course of the relationship. These are resolved successfully in one case and unsuccessfully in the other. The issues discussed include the role of the researcher; differences in the effects of the researcher being part of the organization or outside of it; selection of problems; motives for using behavioral science; the link between practical and theoretical interests; developing and sharing insights and recommendations from fact gathering; the utilization of findings and continuing use of behavioral science resources such as feedback and methodology in ongoing program practices. The author concludes that training in the use of scientific values and methods of problem-solving may be the greatest contribution the behavioral sciences can make to any ongoing human enterprise.

PROMOTION OF UTILIZATION
SYNTHESIS

Lippitt, Ronald. The use of social research to improve social practice. *American Journal of Orthopsychiatry,* 1965, 35 (4), 663–669. (III, I; Gathering knowledge, Selecting knowledge, Diffusing knowledge, Educational diffusion, Middleman role, Utilizing knowledge, Research-practitioner gap)

477

At the Center for Research on the Utilization of Scientific Knowledge of the University of Michigan, an inquiry is being made into the *use of scientific resources in solving social problems.* Six patterns of use of scientific resources are identified and illustrated: (1) derivation of action designs from relevant research findings, (2) adoption of experimentally tested models of practice, (3) diffusion of knowledge between practitioners, (4) diagnostic team with feedback of data, (5) internal action-research process, and (6) training of consumers to be open to the use of science. There are significant differences between the problems and processes of research utilization in the area of social research and social practice, as compared to the areas of applied biological and physical science. The role of the research utilization agent requires that he be a linking agent at various points in the flow of research use. It is necessary to develop new skills of retrieving and organizing research-based knowledge in such a way that it links to the needs of the social practitioner or client population.

EDUCATIONAL INNOVATION

CONFERENCE REPORT/ FIELD EXPERIMENT

Lippitt, Ronald, et al. The teacher as innovator, seeker, and sharer of new practices. In R. E. Miller (Ed.), *Perspectives on educational change.* New York: Appleton-Century-Crofts, 1966. Pp. 307–324. (II; Organizational climate for change, Adoption of innovation, Characteristics of innovative educators and institutions)

This article reports the preliminary findings of a conference series on forces facilitating and hindering change and a field experiment on the innovation-diffusion process among teachers. Educational change demands more commitment, risk taking, and outside help than fields where innovation = the adoption of a new product. Facilitating and hindering forces relate to characteristics of practice, physical and temporal arangements, peer and authority relationships, and personal attitudes. Facilitating forces include: the practice is relevant and aids student growth, has peer and outside support, and has built-in evaluation; time and space for staff meetings, and hiring substitutes and clerical help to free teachers to meet; relaxed, flexible, supportive, and informative peer and authority relations; personal attitudes open to new ways and outside help, with rewards for growth. Linking to consultants as well as administrators and other teachers aids research utilization. Teacher perceptions aiding innovation include: the practice is relevant, I am innovative, my colleagues and the principle support change; confident, committed teachers share information more, and younger and older teachers change more readily than the middle range of teachers. Diffuse social structures and small teacher groups favor innovation; hierarchical structures favor adoption. Principals sensitive to nuances of teacher relationships foster diffusion. Constructive suggestions, etc., from principals are also conductive to innovation and adoption.

PROMOTION OF UTILIZATION

PILOT STUDY

Lippitt, R., & Butman, R. W. *A pilot study of research utilization aspects of a sample of demonstration research mental health projects.* Final Report for Contract No. PH 43651047, National Institute of Mental Health, 1969. (III; Diffusing information, Research diffusion/dissemination, Communication)

Thirty projects were studied to determine their "payoff" in terms of information diffusion. Two basic types of projects were studied: *sponsor-host* projects, which were carried out by an organization other than the sponsor, and which were concerned with research and validation as preparation for communication to potential adopters, and *single-site projects*, which tended to be service-oriented. Coordination of and communication between personnel in sponsor-host projects were important to success. Pretesting does not contribute to payoff; perception of diffusability does. Sponsor-host projects often perform the spread function. High payoff is likely regardless of prior concern about spread if opportunities occur for sharing an innovation, even if it is undocumented. High payoff occurs more if key personnel remain after the funded period, if the demonstration is easy to handle, if there are opportunities for diffusion, and when personnel are motivated to spread. Several things should be considered when making proposals: how feasible is the demonstration; what are the needs of potential adopters and what is the best way to communicate with them; and what spread activities are planned. Conferences of proposal writers and others with special concerns could increase payoff. Change agents affiliated with the funding agency could assist by providing continuing consultant support, making thoughtful improvements to the linkage of resources, and retraining personnel in the shift from operation to diffusion.

PROMOTION OF UTILIZATION
ANALYSIS/SUGGESTIONS

Lippitt, R., & Havelock, R. Needed research on research utilization. In *Research implications for educational diffusion.* East Lansing, Mich.: Department of Education, Michigan State University, 1968. (I, II, III; Middleman role in linkage, Educational innovation, Processes of innovation)

This paper outlines the research utilization problem with respect to activities in and around local educational agencies that bring about adoption of innovations, and it identifies the types of information needed to solve the problem. (The Havelock section of the paper concerns what yet needs to be done and is not abstracted.) Three main activity patterns are identified: the potential adopter seeks help because he feels a need for improvement; a change agent directs information to someone he believes to be a relevant target; or a third party acts as a linking agent to connect resources and potential consumers. Strategic implications of each activity pattern are discussed. An adopter's success can be enhanced by a role-playing rehearsal of the first effort at utilization. An adopter needs outside help most at the point of greatest risk-taking; the type of support needed for different innovations is still not clearly known. An adopter should understand that internal resistance is natural and may be realistic or emotional. Emotional resistance may be dispelled by sensitivity training. Slavish adoption of change is as dangerous as chronic resistance. An adopter's first innovation attempt should be supported and given the most possible sense of success to insure its continuity.

CHANGE AGENTS
REVIEW AND ANALYSIS

Lippitt, R., Watson, J., & Westley, B. *The dynamics of planned change.* New York: Harcourt, Brace, 1958. (III; Model for change, Strategies for effecting change)

The study is a comprehensive analysis of the roles, training, and conceptual frameworks of change agents, and a survey of change research to determine research priorities. Problems of internal relationship within client systems may be faulty distribution of power, mobilization of energy, or communication. External relationship problems include discrepancy between perceived and actual environment, the need for changed goals and values, and inadequate relational and problem-solving skills. During change, the client is exposed, simultaneously or alternately, to change forces and resistance forces. The timing and nature of these forces is discussed. The role of the change agent includes problem diagnosis; assessment of change motivation; choosing appropriate objectives; assessing, choosing, and establishing a helpful role; guiding the change; responding appropriately to progressive encounters; and contributing to skills and theories of the profession. Seven phases of change are: development of need, establishment of change relationship, clarification of problems, choosing goals and action-plans, initiating actual change efforts, stabilizing change, and achieving a terminal relationship. Specific "helping methods" are discussed in detail for each phase of change. There is need for a unified theory of change and changeability, and research on priorities is needed. Change agent training requirements are discussed, including specialization by type of client, by diagnostic orientations and methods, by areas of change objects, by level of problem, and by type of change method.

INDUSTRIAL INNOVATION

EMPIRICAL STUDY

Little, Arthur D., Inc. *Patterns and problems of technical innovation in American industry.* Report to National Science Foundation, No. C–65344, 1963. (II, IV; Adoption of innovation)

Five mature industries (textiles, machine tools, construction, appliances, and semi-conductors) were studied with respect to patterns of adoption of technical innovations for profit. The companies studied showed little growth or adoption of technically or economically significant innovations. Product or process changes evolve slowly and then occur in clusters, since changes required for implementation of a major innovation foster further innovation. Major innovations originate "outside" from foreign technology, independent inventors, small new firms, or from invasion by technically advanced and established forms in other industries. The last is the major source of technical change. Slow innovation rates are due to the industries' bases on craft, not science, to their fragmentation (many companies are too small to support innovation; work is divided into small steps under varied control), to their focus on production, to their commitment to the status quo (a commitment protected by social systems viewing change as a threat), and to their lack of entrepreneurship. To encourage entrepreneurship and innovation, new businesses should be fostered and industry-wide consulting should be developed. Invasion by other industries can be encouraged by promoting industrial mobility. The government should act to represent broad interests and act as a partner in technical change.

RESEARCH-PRACTITIONER GAP

THEORETICAL ANALYSIS/ SUGGESTIONS

Loevinger, Jane. Conflict of commitment in clinical research. *American Psychologist,* 1963, 18, 241–251. (III; Research-practitioner collaboration)

The author explores the inevitable interpersonal aspects of research in a psychological or psychiatric clinic and analyzes conflicts between clinicians and research workers. Many clinicians who want to do studies do not have the proper experimental background and their designs are not adequate. Appropriate sampling and statistical methods need to be worked out in collaboration with a researcher. A historical discussion is included on the holistic versus dissectionist approaches in science. The clinician is perceived as maintaining a holistic viewpoint while the researcher is the dissectionist. Fruitful collaboration depends on acceptance of these opposing tendencies. The author feels that the researcher should look for what is objective, behavioristic and quantifiable without losing the sense of the problem; the clinician should seek to preserve the depth and complexity of the problem without putting it beyond the reach of objective and quantifiable realization.

USE OF GROUPS FOR CHANGE

CASE STUDY ANALYSIS

Longest, J. W. Group formation for teaching. *Journal of Cooperative Extension*, 1964, 2 (3), 143–151. (IV; Organizational factors involving innovation, Educational diffusion)

The use of sociometrically formed groups was experimented with in meeting the demands of an intensive farm management program in some New York counties. One demand was for recruiting most of the eligible farm families in the township areas selected. Attendance at meetings and fulfillment of program requirements were good when the groups were well formed and administered. Success of these groups was attributed to high cohesiveness that occurred because the groups were formed on the basis of sociometric testing.

CHARACTERISTICS OF INNOVATORS

THEORETICAL ANALYSIS

Lundberg, Craig C. Middlemen in science utilization: Some notes toward clarifying conversion roles. *American Behavioral Scientist*, February 1966, 9, 11–14. (III; Middleman role, Linkage)

The article discusses conversion roles to be considered when converting scientific knowledge into practice. The author describes a continuum from science to nonscience. Science is defined as a body of knowledge, a method of data gathering, and a group of values or norms, all of which meet "certain specific requirements." He distinguishes between scientists and practitioners, the latter being persons with an objective other than the accumulation of knowledge using empirical methods under certain value conditions. Several conversion roles are placed on the science-practice continuum: *technicians*, whose competence is restricted and who may know little about the knowledge basic to their specializations; *professionals*, who are basically practitioners trying to use scientific knowledge and methods for their service objectives; and *applied scientists*, who are not pure scientists but who are "concerned with the prediction and production of social and cultural change," usually change regarding a specific problem.

PLANNING FOR CHANGE

CASE STUDY ANALYSIS

Lystad, Mary H. Institutional planning for social change. *Sociology and Social Research*, January-February 1960, 44, 165–171. (IV; Resistance to change, Organizational change)

A community welfare organization which is the central planning group for 83 health, welfare and recreation agencies in a large city is the focus of this study. The research concerns *resistance to changes* in plans brought about by scientific findings *in the field of social work*. A content analysis of group meetings shows that more public relations work than planning work was done by the group. Once there was a decision to institute change, subsequent decisions concerning a course of action occurred more often than did mere discussion of the problem. Members with higher social status and thus greater vested interest in the status quo, were less interested in planning activities than other members. Social workers in the group were more disposed toward changes than were nonsocial workers. All members, in general, held similar views about their role in the planning process and thus shared an organizational commitment to change. Thus, though equally committed to change the professional within the particular field seems more likely to accept change than the nonprofessional. The author suggests that the extent to which the scientist is allowed a role in change emanating from his field of scientific knowledge and the extent to which the professional formulation of change is implemented, modified or impeded by other groups, merit more careful research.

RESEARCH-PRACTITIONER GAP

ANALYSIS/RECOMMENDATIONS

Mackie, R. R., & Christensen, P. R. *Translation and application of psychological research.* Technical Report 716–1. Goleta, Calif.: Santa Barbara Research Park, Human Factors Research, Inc. 1967. (III, I; Utilizing information, Promotion of utilization, Barriers to utilization)

Analytical methods were used to study researcher-practitioner communication, characteristics of research and practice which affect application, and attitudes of practitioners affecting application. Learning research had little practical effect due to overly specific studies reported in too much jargon. There is need for learning engineers to assess the significance and implications of research, and need for better understanding among researchers of the practical training environment. Users must learn to describe problems to researchers. Universities should train engineering change agents. Some specific recommendations to mission-oriented agencies were: establish the relevance of the research you sponsor and require researchers to maintain contact with users; tailor research conditions to those found in practical settings; test hypotheses operationally, not in the lab; if this is not done, at least validate findings in appropriate settings; hold conferences with research agents and with agencies that abstract, store, and retrieve information; validation studies should use the original investigator as a consultant; sponsoring agents should hold symposia to develop meaningful research tasks and to emphasize to users the applicability of existing learning principles for educational technology; standardize the writing of research abstracts to insure the inclusion of all relevant information.

CHANGE AGENTS

CONFERENCE REPORT

Manela, Roger. Notes on innovation diffusion. Unpublished summary of conference, Manpower Laboratory, Institute of Labor and Industrial Relations, University of Michigan, February 1969. (I, III; Processes of innovation, Characteristics of innovative organizations)

The paper reports a conference on theoretical and practical aspects of innovation diffusion. Information about innovation must be aimed at the proper level in the receiving agency. When choosing an agency to test an innovation, keep in mind that action-oriented agencies are often too busy doing things to be aware of or analyze innovations they are making, and they have high staff turnover which inhibits clear evaluation of the effects of an innovation. Risk-taking agencies are not hampered by much resistance to change. Pace-setting agencies will probably spread a successful innovation; which criteria to use when selecting a pace-setter agency have not been stabilized. Agency units concerned with internal power relations and who feel change might increase their work load will resist change; units concerned with output tend to be pro-change. Users accept innovation commonly in a crisis situation which generates an appeal to the change agent (perhaps in spite of some internal opposition), since the crisis enhances the credibility of the innovation. Other modes of introducing innovation include fortuitous contact, coercive power, and rational analysis of an innovation's suitability. Plan to evaluate an innovation's effectiveness realistically; exact replication is almost impossible.

ORGANIZATIONAL AND INSTITUTIONAL CHANGE

CASE STUDY ANALYSIS

Mann, Floyd C. Managing change. In A. S. Tannenbaum (Ed.), *The worker in the new industrial environment.* Ann Arbor, Mich.: Foundation for Research on Human Behavior, 1962. Pp. 18–21. (IV, II; Industrial innovation. Process of change)

A study was made of a firm which set up a new electronic data processing system. Results showed there is a greater risk under the new system. A serious error costs more, and a typical error costs more in dollars and time. There is a greater chance that an error will be detected, and there is a greater chance that an error will be attributed. Secondly, there is a greater interdependence and integration. Others' errors, both in the work group and outside, have a greater affect. Absence has a greater effect. There is a greater contact required with others in own group and there is a greater necessity for understanding the system. Thirdly, there is greater rationalization of the system. There is less choice of alternative means, less work checked by people (more by machine) and the work pace is dictated more by machines or by others than by oneself.

ORGANIZATIONAL CHANGE
SEMINAR REPORT

Mann, F. C., & Neff, F. W. *Managing major change in organizations.* Ann Arbor, Mich.: Foundation for Research on Human Behavior, 1961. (IV; Models for change, Change agent, Opinions and attitudes concerning change)

Generalizations about major organizational change are presented. The idea of a new role, the change catalyst, is given: a person who helps the change agent accomplish his assignment. Key executives must fully understand the implications of change. Discussions to insure understanding and effect involvement are suggested. The change agent must understand and use different kinds of power: legitimate, reward, coercive, expert, and referent. A model for understanding an individual's response is given which takes into account the individual's perception, evaluation, and judgment of the change, based on his information about and involvement in it; his evaluation of its impact on him; and his response to the change. The seminar publication includes a chart relating an individual's response to organizational strategies for managing the "controlled explosion" of change. Depending on the situation, management should welcome the acceptance of change, provide information about it, or scale down expectations to reality. Resistance should be countered by increased information and/or increased involvement in the control of change. Opposition stemming from an individual's perception of the change as self-destructive should meet with management responses such as: recognize that there is an unfavorable climate of trust, demonstrate how steps being taken are compatible with personal goals, share control of the change, or review change objectives and either change them or change personnel.

INDUSTRIAL INNOVATION
CASE STUDY ANALYSIS

Mansfield, Edwin. *Industrial research and technological innovation: An econometric analysis.* New York: W. W. Norton, 1968. (III, IV; Response to innovation, Organizational change)

The book summarizes the author's research and case study analysis on industrial research and change as a result of technological innovations. It is not always true that the largest firms do more than their share of innovating; this is true if the investment required is very large, if a large organization is required to utilize the innovation, or if the average size of a large organization is greater than the average size of all potential user organizations. The average lag between invention and innovation is five to ten years, with mechanical innovations adopted most quickly and electronic innovations adopted most slowly. The lag is shorter for consumer than industrial products and for government-funded (not privately funded) developments. Firms grow more rapidly than their competitors for five to ten years after the introduction of an innovation, with the growth rate change most noticeable in small firms. The rate of adoption of an innovation is slowest for a major new technique, especially if it is not very profitable and requires a large investment. As more firms adopt an innovation and more information about it is accumulated, competitive pressures for adoption increase. Speed of adoption relates directly to firm size and investment profitability. Characteristics of top and middle management are important. A firm which has recently introduced a major innovation will be relatively slow to introduce the next innovation.

DIFFUSION OF INNOVATION MODEL

Mansfield, Edwin. Intrafirm rates of diffusion of an innovation. *Review of Economics and Statistics,* 1963, 45, 348–359. (I, IV; Technological innovation, Organizational factors involving innovation, Research diffusion)

A mathematical model for intrafirm diffusion of an innovation is presented and checked against statistics from 1925–1960 on the use of diesel locomotives. The mathematical model is given as follows $p_i\ (t) = [1 = e - (a_i{}^1 = V_i\ t)]$ -1. In explaining this the author states: "Thus, if the model holds, the proportion of a firm's locomotives that were diesels should be a logistic function of time. And the parameter of this function measuring the intrafirm rate of diffusion, V_i, should be linearly related to II_i, l_i, S_i, and C_i . . . ." II_i is the rate of return from using a diesel locomotive, L_i is the time separating the first and last firms using diesels, S_i is the size of the firm, and C_i is the liquidity of the firm as it begins to dieselize. Later M_i was added as a variable; this is the percentage of the firm's locomotives 15 or more years old when the company began to dieselize. The author concludes, "The effects of II_i, L_i, S_i, C_i, and M_i are in the same direction and the model . . . seems to fit about as well in one case as in the others. The only difference is that some coefficients are statistically significant in one case but not in the other . . . ." The 0.05 level of significance is used. The profitability of an innovation is also related to diffusion, and the author suggests checking the model against statistics available on diffusion of different innovations, especially within a single firm.

ADOPTION OF INNOVATION SURVEY/MODELS

Mansfield, Edwin. Speed of response of firms to new techniques. *Quarterly Journal of Economics,* 1963, 77, 290–311. (II, IV; Organizational climate for change)

Industrial techniques spread by imitation of successful innovations. Four propositions about the speed of adoption were tested: large firms adopt sooner than small ones, with the time lag inversely related to firm size; time lag decreases faster than firm size increases; time lag is inversely related to the extent of the returns a firm obtains from an innovation; and time lag decreases faster than the profitability of investment in the innovation increases. Data were collected on the spread of 14 innovations in 294 industrial firms. The hypotheses were, in general, supported. Speed of adoption is directly related to the profitability of the innovation. If profitability is held constant, large firms innovate sooner than small ones. A firm's financial health is not closely related to speed of adoption; characteristics of top and middle management are. A few key advocates can greatly hasten adoption. A firm that is first in introducing one innovation is likely to be slow to introduce the next innovation. These findings may be more applicable to research utilization in education and social science if "profitability" can be equated with "felt need" or "relative advantage."

ORGANIZATIONAL CLIMATE FOR CHANGE

SURVEY

Marcum, R. Laverne. *Organizational climate and the adoption of educational innovation.* Research Report for Office of Education, Contract No. OEG-4-7-078119-2901. Logan, Utah: Utah State University, March 1968. (II; Characteristics of innovative institutions)

An educational innovation checklist was used to select the fifteen most and the fifteen least innovative schools from fifty suggested by five western State departments of education. Specific types of possible innovations in the areas of scheduling, staff utilization, procedures, organization, curriculum, and facilities were included in the checklist to choose the thirty schools studied. Then the schools were studied to determine if their organizational climates were closed or open. School staff members were asked about organizational climate, teacher behavior, and principal's behavior. In an open climate there is high teacher morale, involvement in teaching, little burden of busy-work from the principal and a moderate amount of friendly relations with other teachers. The principal is considerate of teachers as people, is not formal and aloof from teachers, tries to move the organization, and he does not have to do any "straw boss supervision" of teachers. In a closed climate, about all that keeps teachers in the school is their satisfaction from their relationships with one another. A statistical study indicated that innovative schools had open climates, higher expenditures per student, younger staffs with greater mobility to other schools, larger professional staffs, and administrators and teachers who viewed their schools as having more open climates.

RESISTANCE TO CHANGE

DESCRIPTIVE ANALYSIS

Marmor, J., Bernard, V., & Ottenberg, P. Psychodynamics of group opposition to health programs. *American Journal of Orthopsychiatry*, 1960, 30, 330–345. (I; Promotional diffusion)

The article analyzes the sources of the intense and determined opposition to health programs based on scientific knowledge and recommendations. An example is the opposition to fluoridation of water. Spontaneous changes seldom encounter opposition, but resistance is likely to develop to consciously promoted changes, with resistance proportional to promotion effort. Resistance factors include external ones such as threats to power, prestige, or economic security, problems of timing, and various cultural conditions, as well as internal factors centered on feelings of vulnerability of the individual's life-space.

RESEARCH-PRACTITIONER GAP

SYNTHESIS

Marquis, D. G., & Allen, T. J. Communication patterns in applied technology. *American Psychologist,* 1966, 21, 1052–1060. (I, II; Communication, Diffusing information)

The working methods of applied researchers differ from those of "pure scientists" in several ways. Differences in work methods and communication patterns are discussed, based on a literature study of the information sources of scientists and technologists. Scientists rely on professional literature and colleagues for information; technologists lack really adequate journals and are in any case more concerned with customers and vendors. Technological journals cite fewer previous papers and are secondary to unpublished reports as a communication medium. Technologists are also less preoccupied with publishing. Scientists keep abreast of information through seminars, small conferences, and informal personal and written networks; technologists' knowledge of new developments comes mostly from their immediate co-workers, especially in industrial and government labs with strong mission orientation and bureaucratic administrative structures. There seems to be little direct contact between science and technology, although there does exist a "gap-filling" science more responsive to technological need.

ORGANIZATIONAL CLIMATE FOR CHANGE

REVIEW

Marrow, A. J., Bowers, D. G., & Seashore, S. E. *Management by participation.* New York: Harper & Row, 1967. (IV; Strategies for effecting change, Models for change, Planning for change)

This volume reports a change program initiated when a successful manufacturer acquired a less successful competitor. Changes introduced cut across organizational structure, policies, work methods and technology and included the building of a new organizational climate with the introduction of participative management at all levels. The book focuses on several important issues. First, it provides a comparative study of the results in an organization of differing managerial styles on human behavior, as well as on its economic performance. Second, it carefully documents how applied behavioral science brings about change. Third, it was written by those most intimately involved (well-trained behavioral scientists). Fourth, it reports on the organization before changes were effected. Fifth, it contains a careful evaluation by third party researchers.

ORGANIZATIONAL CHANGE

EXPERIMENTAL STUDY

Marrow, A. J., & French, J. R. P., Jr. Changing a stereotype in industry. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 583–586. (IV; Industrial innovation, Adoption of innovation, Resistance to change, Change agents)

The report studies an effort to modify a garment factory hiring bias against older women, an effort motivated by a tight labor supply. Under guidance of a staff psychologist, top management designed and carried out a test of their conviction that older employees were less productive, slower learners, absent more often, and had a higher turnover rate than younger employees. The research demonstrated that older employees were more desirable as measured by management's criteria. Resistance among supervisors (who remained unconvinced by the research) was overcome by re-education using group discussions on the motivations and bases of the bias. Initial efforts to overcome resistance by prestige suggestions by the psychologist, the personnel manager, the plant manager, and the company president all failed. Group discussions and "guided experiences" allowing the supervisors to reorient themselves gradually from within were the methods which effected change. The project culminated in a group decision by supervisors recommending an experiment in training older workers.

ATTITUDES CONCERNING CHANGE

INTERVIEWS

Marsh, C. P., & Brown, M. M. Facilitative and inhibitive factors in training program recruitment among rural Negroes. *Journal of Social Issues,* 1965, 21, 110–125. (III, IV; Introducing innovation)

An interview study to determine interest in free job training among poorly educated, rural Negroes in North Carolina was conducted; the interviews tried to correlate interest with age, educational level, and community norms on innovation. It was found that interest was widespread, especially for evening training or if compensation were paid for daytime training. Younger respondents were more interested in travelling to technical institutes than were older workers. Men worried that daytime training would conflict with current jobs; women anticipated day time conflicts as well as transportation and family care problems at night. There seemed to be no significant correlation of interest with age, sex, educational level, and alienation as measured by an anomia scale, nor did interest relate to whether the local agricultural extension agent considered the community to be "progressive" or not.

PROCESSES OF ADOPTION

MODELS/ANALYSIS

Mason, Robert. An ordinal scale for measuring the adoption process. In *Studies of innovation and of communication to the public. Studies in the utilization of behavioral science*, Vol. 2. Stanford, Calif.: Institute for Communication Research, Stanford University, 1962. Pp. 99–116. (III, I; Promotional diffusion/dissemination, Utilizing knowledge, Process of innovation)

Two similar models as postulated by rural sociologists are presented for the adoption of new farm practices, involving (a) awareness of an idea and its acceptance as a "good" idea, (b) seeking information, (c) evaluation as adaptable to one's own farm, (d) small-scale trial, and (e) adoption. One model is supported by a questionnaire study, but the questions may have structured responses to fit the model. A third study, using open-ended items, and separating adoption items from information-use items, was analyzed by another group of rural sociologists into a similar five-stage model. All these studies were perhaps unreliable, not validated, and subject to personal bias. Mason suggests a two-stage model: awareness and adoption. A more reliable, valid, and objective questionnaire was devised to study one simple, reversible practice and three complex, expensive, irreversible practices on which validating information was available. Scalogram analysis was employed to test the unidimensional sequencing of the adoption stages. A reliability coefficient was calculable, and from independent data, an estimate of adoption validity was calculable. Detailed analyses of each of the four practices are presented and discussed. Conclusions: (a) awareness usually occurs before adoption; (b) the trial stage is not necessary in the adoption process and a trial period may not imply its consideration for adoption; (c) evaluation occurs before information-seeking; (d) adoption is not the terminal stage; information seeking and sometimes evaluation can occur after adoption; and (e) there is no single adoption process for all practices or all farmers, and no process particularly supports the models presented at the beginning of the paper. The inexpensive practice was adopted without much information-seeking; all the postulated stages could occur with respect to a complex practice without leading to adoption. Festinger's dissonance theory is discussed, especially in relation to reasons for continuing to seek information about a practice even after adopting it (the adoption has involved mild conflict). The data suggest that information is sought several times, at different and multiple levels, for several reasons during and after the adoption process.

ADOPTION OF INNOVATION

SURVEY/ANALYSIS

Mason, Robert. The use of information sources by influentials in the adoption process. *Public Opinion Quarterly*, 1963, 27, 455–457. (II; Processes of communication, Opinion leadership, Adoption process)

The flow of information through the channels of mass communication to interested individuals has been described empirically in such diverse situations as voting behavior, innovation in agriculture and medicine, and special interest realms among women. Many of these studies have attempted to account for the mediating effect of interpersonal relations. The author focuses particularly on the "two-step" hypothesis as reformulated by Elihu Katz. The two-step hypothesis can be described by three postulates: (1) personal influence figures more frequently and more effectively than any of the mass media in affecting decisions of both opinion leaders and non-leaders; (2) personal influence flows from opinion leaders to those less influential, and those opinion leaders tend to be very much like those whom they influence in terms of socio-economic level; (3) opinion leaders are exposed more to the mass media than are those whom they influence. The author reports on a study in progress to subject item 3 to an empirical study. In this study, where the main variable is relative influence and the criterion is use of information source (primarily mass media), a new variable would be introduced: the process of adoption, which sociologists see as a process composed of sequential stages beginning with awareness and terminating with the actual adoption.

DISSEMINATING INFORMATION
QUESTIONNAIRES/RECOMMENDATIONS

Matheson, N. W., & Sundland, D. M. Objectives of the FDI system for mental hospital personnel in Missouri. Paper presented at the Third International Congress of Medical Librarianship, Amsterdam, May 1969. (I; Utilizing information/knowledge, Research diffusion)

The paper reports a study by questionnaire of the impact of different kinds of disseminated information on different members of user groups in mental hospitals. University libraries, friends, public libraries, NCMHR, and NLM were preferred in the order given as resources after exhausting one's own library resources. Most felt their own libraries were inadequate and desired new information sources. Most users did not read much journal literature and depended on interpersonal exchange of information. New book information came from friends, reviews, and publishers' notices. An effort was made to establish a new information system (FDI). Groups met at each institution and clinicians expressed their dissatisfaction with literature resources as time-consuming and unrewarding, since researchers do not make clear the applicability of findings. Institutional libraries consisted mostly of books not worth stealing. An information dispersal network would be effective only if getting the right information to the right people had any impact; unread reports have no impact. FDI developed as a personalized service of supplemental information and journal Xeroxes, with individuals notified only of information coded for terms fitting their interest profiles. FDI benefits are seen by users as time conserved, but additionally it appears that FDI members pass on references to non-member colleagues, thus contributing to staff development at many levels.

CHANGE AGENTS
EXPERIMENTAL STUDY

Mausner, J. S., & Mausner, B., et al. The influence of a physician on the smoking of his patients. *American Journal of Public Health and the Nation's Health*, 1968, 58 (1), 46–53. (II, III; Attitudes concerning change, Physicians as change agents)

Efforts to date to reduce the smoking of cigarettes have generally met with only limited success. Because of this, it seemed important to test the potential influence of a physician on the smoking behavior of his patients. A study was conducted by two physicians who both strongly believed that smoking and disease were linked. Both had engaged in attempts to influence their patients to stop shortly after the Surgeon General's report came out. At the time

488

of the study, however, neither was routinely discussing smoking with his patients. Patients of both doctors were given questionnaires regarding their smoking habits. One physician, who was appointed leader of the study group, spoke briefly with his patients regarding the hazards of smoking. He offered a supply of Nicoban and a pamphlet that indicated how to stop smoking effectively to *only those patients who indicated an interest*. The physician discussed smoking hazards in depth only with those patients who wanted to discuss the problem. One week after their visit to the doctor, patients of both physicians were visited by an interviewer who questioned them about their smoking habits. Six months later the patients were called again and asked about their smoking behavior. It was discovered that (1) a higher proportion of patients in the study group had reduced smoking than those not in the group, and (2) the heavy smokers were the ones who tended to change in this study. This may be an indication that heavy smokers take persuasive influences more seriously, either because of symptoms that indicate danger or because they view the issue as salient. Further, the physician for the study group had a *close personal relationship* with his patients. The authors conclude with specific suggestions for future studies on stopping smoking.

ORGANIZATIONAL CHANGE

CASE STUDY ANALYSIS

Mayer, R. R. Case study of effective communication in industry. *Journal of Business*, October 1958, 31, 344–350. (IV; Planning for change, Strategies for effecting change, Communication in change process)

The author discusses in detail the means which a machine tool manufacturer uses to gain support for its new equipment policy. The channels of communication used include quarterly meetings in which the president personally addresses all company employees, company newspaper, and day-to-day contact. Three surveys were conducted for the company by Opinion Research Corporation to measure attitudes of employees toward the company and job. In the last two tests, three questions related to equipment policy were included. The company's shop employees compared favorably with a national sample of foremen and supervisors. However, no comparison is available for employees in comparable firms. Factors which may have influenced receptiveness to change in this particular company are: (1) type of personnel—primarily highly skilled people for whom a new machine is another tool to improve the quality of their own work, (2) firm does not acquire equipment which permits displacement of a large number of employees at once, and (3) absence of a labor union. The author concludes that the observations made suggest management first should clarify in its own mind the reasons for adopting a specific policy. Second, it should inform the entire organization of the exact nature of the policy. Third, it should explain the reasons for the formulation of this policy and fourth, it should educate its employees in the principles which underline the policy.

STRATEGY FOR EFFECTING PERSONAL CHANGE

THEORY AND PRINCIPLES

McClelland, David C. Toward a theory of motive acquisition. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 209–221. (II; Models for change, Process of change, Educational innovation, Introducing innovation)

The motive for high achivement can be developed in individuals. Principles for teaching and internalizing "n" achievement are based on behavioral science knowledge. The influence or motive change process is conceived in terms of input, intervening and output variables. The input variables include reference group support, personal warmth and support, feedback on progress, personal and objective goal setting, building achievement oriented conceptual networks and linking this network to reality, self and cultural values. Twelve propositions are detailed for implementing a development program based on outcome or dependent variables such as job improvements, use of time and money, nature of job and rewards, use of feedback, risk-taking and achievement associated concepts.

PROMOTION OF UTILIZATION
THEORETICAL ANALYSIS

McClelland, W. A. The process of effecting change. Presidential address to the Division of Military Psychology, American Psychological Association, San Francisco, September 1968. (III, I; Planning for change, Characteristics of innovators, Evaluation of innovation, Models for change)

Dr. McClelland suggests ways of moving from research to development to application and use, based on his long involvement in military psychology. The Army's implementation of research results may take anywhere from a few weeks to more than 10 years. He discusses several fallacies about research utilization: that a good product will succeed on its own merits; that once an innovation has been introduced, no followup or feedback is needed; that there is an orderly process from research to development to use; that clients are rational and logical; and that there is a "best way" to change a complex situation. The gap between knowledge and practice in education is related to these fallacies as well as to generalized resistance and management and funding problems. Innovators have certain characteristics including wide-ranging knowledge and contacts, youth, comparative affluence, and a talent for making others somewhat uncomfortable partly due to their advocacy of change. Criteria for evaluating change models are given, including factors such as mutual recognition of change agent and client roles, cost-effectiveness, communicability and applicability of the model, and means for detecting gaps in theory and practice. Two premodels are discussed, the interpersonal paradigm of three stages (antecedents, process, and results), and the interorganizational paradigm consisting of research requirements, the conduct of R. & D. and the decision process based on research findings.

COMMUNICATION
EXPERIMENTAL STUDIES

McKown, Norman. Two studies on the communication of scientific information. In *Studies of innovation and of communication to the public. Studies in the utilization of behavioral science,* Vol. 2. Stanford, Calif.: Institute for Communication Research, Stanford University, 1962. Pp. 245–260. (III; Disseminating knowledge, Utilizing information, Promotional diffusion, Sources of communication)

I. The credibility and strength of image of source of a written message was studied experimentally. Various messages were presented to 139 students who were tested immediately and after four weeks to determine retention of content. Credibility did not affect retention over time, although strength of the image source did. Style variables affected immediate but not long-term retention. The author feels that the study implies that "communication devices which serve to personify the source . . . will enhance the effectiveness of the message over time," and that strong negative affect may cause more retention than a weak positive attitude.

II. Informal vs. traditional styles of scientific technical writing were one-sidedly tested by preparing an *informal* 172-page technical manual and distributing it to interested people. About 200 also received a self-administered questionnaire about reactions to the style of the book. Most favored the style, although a few disapproved unless it was a deliberate device to make reading a long report easier. How many of the 200 questionnaires were returned is not stated (people with negative opinions might be less apt to return it). The author felt that those who intended to use the information soon would prefer the style (informal), while those with just general interest would not.

ADOPTION OF INNOVATION
LITERATURE REVIEW

McLaughlin, C., & Penchansky, R. Diffusion of innovation in medicine: A problem of continuing medical education. *Journal of Medical Education,* May 1965, 40, 437–447. (II; Diffusion of innovation in medicine, Medical information flow)

The authors present a literature review (29 sources), and indicate that the nature of diffusion of innovation among physicians is a highly complex process. It is necessary to deal with the whole system, including the channel, source, medical problem, nature of the medical practice, background of the physician, type of search in which he may engage, and specific innovation. To find out merely what the physician did in a specific instance, rather than why he did or did not seek or adopt new information, will not explain the nature of the process of information flow in medical practice. Understanding of the *physician's behavior as a decision-making individual* appears to be the major missing link in our understanding of the diffusion of innovation in medicine. The planning of truly effective continuing education for physicians depends on the understanding and use of the process of information flow and on knowledge of the factors that determine whether available information will be accepted and adopted in practice. The authors are currently conducting a survey to see if tools of management-decision theory can be applied to problems of information flow in medicine. They were to test the *physicians'* confidence on a *scale of subjective probability.* (If a physician is sure that a given treatment is correct for a given problem, he checks 90–10; if he is only moderately sure, he checks 70–30; if he thinks that the suggested treatment is just about as good as others, 50–50; if he is moderately sure that the treatment is wrong, 30–70 or 10–90.) He is then to be asked to pinpoint actions about which his confidence level has recently changed, including his past experience, channel and source of information, type of search in which he was engaged, and action taken.

RESEARCH-PRACTITIONER RELATIONSHIP
REVIEW/SUGGESTIONS

Meier, Gitta. Research and action programs in human fertility programs: A review of the literature. *Social Work,* 1966, 11 (3), 4–55. (III; Adoption of innovation, Promotion of utilization, Barriers to utilization)

This article presents a review of the history and theory of *research and action programs in family planning.* Particular emphasis is placed on the increasing need for social workers and social work agencies to become more involved in this type of work. This is supported by the success of research and action programs with large formats, aimed at those most needy of family planning assistance. The author points out that the usual attitude of social workers seems to be to wait until asked to give birth control information, and that personnel are too poorly trained to be of service. As the research shows, the old idea that families don't practice birth control because of "insufficient motivation" is no longer so tenable; there is a need for informed personnel, including doctors, to take an aggressive position and volunteer such information. In this way they would be fulfilling unexpressed needs of their clients. By making family planning centers more accessible; by using outreaching, reinforcing approaches; minimizing costs; and stimulating interest in family planning instead of waiting until a real population problem evolves; current research and action programs have found significant successes. Further research is needed in such problem areas as abortion and teenager pregnancy. First, however, disagreement as to how to approach these sensitive problems must be resolved.

COMMUNICATION/RESEARCH DISSEMINATION

THEORETICAL ANALYSIS

Menzel, Herbert A. The information needs of current scientific research. *Library Quarterly*, 1964, 34, 4–19. (I; Classifying information, Disseminating information, Selecting information, Utilizing information)

The demands of an increasing amount of scientific research, new disciplines, cross specialty information exchange, and world-wide coverage of information have placed new stress on information systems. To date, improvement in information systems has centered around increasing speed, efficiency, and comprehensiveness; pointing toward the need for exhaustive search; and increased systematization. These approaches have overlooked three facts about information flow. Scientific information serves functions from reference services to current awareness services. Much scientific information exchange takes place through personal contact. Much more research should be done about the needs of the scientists. The study of information systems should focus not only on fragments of communication behavior but also on what led up to and what followed the transmission of a message.

COMMUNICATION

RECOMMENDATIONS

Menzel, Herbert A. Planning the consequences of unplanned action in scientific communication. In A. de Reuck & J. Knight (Eds.), *Communication in science: Documentation and automation.* A Ciba Foundation volume. Boston: Little, Brown, 1967. Pp. 57–77. (I, III; Research dissemination, Disseminating information, Selecting information)

At a time when scientific communication is becoming more and more subject to well-planned engineering it has been found that informal communication is on the increase. Informal exchange of information can take place through both interpersonal and unplanned communication. The advantages of interpersonal communication are; promptness, selectivity, screening, *know-how*, feedback. Unplanned communication can be most important; this type of communication is accidental or due to a double exposure. Many of these features of informal communication can be built into more advanced formal systems of communication. The efficacy of these formal systems will depend on their scientific audiences. Some of the features of the audiences that could influence the efficacy are: social structure, ideology, whether basic or applied science, and rate of change within a speciality.

DISSEMINATING/DIFFUSING INFORMATION

REVIEW

Menzel, Herbert A. *Review of studies in the flow of information among scientists.* New York:

Bureau of Applied Social Research, Columbia University, September 1960. (III; Research diffusion/dissemination, Utilizing information/knowledge)

This review strives to display in systematic form the diversity of conceptual approaches that have been used in *empirical studies of scientific communication in process*, and indicates the very large variety of topics that can be probed. Emphasis in this review is on showing what research has been done and what research can be done in this area. Empirical data are drawn from 35 of the 40 documents covered in the review. The text includes categories and methodology of tabulated findings, inferences from multiple data, findings not reproduced in this review, and some neglected approaches. Tables cover exposure to various information channels, concentration and intensity of exposure, functions served by reading, sources calling items of information to scientists' attention, channels serving to keep scientists abreast of information flow vs. finding answers to specific questions, and perceived yield of communication-receiving acts.

DISSEMINATING INFORMATION
ANALYSIS SUGGESTIONS

Menzel, Herbert A. Scientific communication: Five themes from social science research. *American Psychologist,* 1966, 21, 999–1004. (III; Utilizing information/knowledge, Research diffusion/dissemination)

Five ideas about research information flows are discussed. All the institutions, arrangements, and customs of research discipline that determine the transmission of research information constitute a system. Several communication channels repeating the same message act synergistically to transmit information. Informal, regular (i.e., at coffee breaks) interpersonal information flow is crucial. Some individuals are regular carriers. Scientists and practitioners in the information system can be considered as publics, with characteristic communication behaviors; information transmission should be planned to fit these behaviors. Science information systems serve multiple functions, including reference, awareness of current knowledge, stimulation to seek varied information, and summarization of broad fields for use by workers in related fields.

USE OF GROUPS FOR CHANGE
INTERVIEWS/ANALYSIS

Menzel, H. A., & Katz, E. Social relations and innovations in the medical profession: The epidemiology of a new drug. *Public Opinion Quarterly,* Winter 1955–56, 19, 337–352. (I, II, IV; Research diffusion, Models for change, Adoption of innovation)

The *diffusion of a new drug through the social structure of physicians* in a given area was studied, with special concern to doctors' reactions to innovations in therapy. It was expected that the social structure served as an important source of information and influence about an innovation and as a factor in a doctor's reaction to general outside information, influence, and innovation. Thirty-three doctors were interviewed to establish sociometric patterns relevant to a recent drug adoption decision. The interview findings were checked against usage as evidenced by local pharmacy files. Katz and Lazarsfeld's two-step communication theory was supported by the data. Doctors in social groups depend on journal reading and other members of the group in deciding on adoption; social isolates rely more on detailmen, advertisements, etc. In groups, two kinds of leadership are apparent: innovators and opinion leaders. A close-knit group of doctors tends to adopt a drug virtually simultaneously. The authors' conclusions/assumptions based on this study are that drug adoption is indicative of general acceptance of innovation, that the town and social structure chosen were not atypical, that the relationship between sociometric patterns and drug adoption is not coincidental, that there does not seem to be much room for a change agent in this sociometric pattern, and that doctors' schedules are so crowded that education must enter through "back-door" social contacts. The authors conclude also that more comprehensive studies of innovative behavior by physicians may be more difficult to accomplish but may also be more rewarding.

COMMUNITY COOPERATION
EMPIRICAL STUDY

Mercer, J. R., Dingman, H. F., & Tarjan, G. Involvement, feedback, and mutuality: Principles for conducting mental health research in the community. *American Journal of Psychiatry,* 1964, 121 (3), 228–237. (IV; Planning for change, Use of groups for change)

The article discusses methods used to maintain optimal community relations while carrying out a saturation study of mental retardation. Since a whole city was studied, interviews could not be arranged individually and quietly. The study could be perceived as damaging to respondents' self-esteem, and securing cooperation was touchy but important. Additional contact was desired with one-sixth of the sample, so again community support was essential to success. Members of the local power structure who were concerned with mental health problems were involved as consultants or staff. Their value was repeatedly demonstrated in obtaining community cooperation. Other community leaders were involved as secondary consultants and thus given useful support to their status and work, and they provided good ideas to the project such as the use of teachers as interviewers during the summer. Research plans were made to advance the interests of participating agencies as well as those of the specific project. Participating agency staff members were encouraged to use project data. Three recommendations on conducting a similar study were made: pretest field procedures somewhere else first; project an acceptable image to the community through community leaders and the press; time field work carefully and choose field workers carefully, and deal continuously with problems of staff morale.

RESISTANCE TO CHANGE
DESCRIPTION/ANALYSIS

Merton, Robert K. Resistance to the systematic study of multiple discoveries in science. *European Journal of Sociology,* 1963, 4 (2), 237–282. (IV; Barriers to utilization, Multiple discoveries in science)

Merton begins with a list of eight reasons why the study of multiple discoveries in science is an important area for sociological inquiry. In so doing, Merton mentions the conflict between the great man theory and the inevitability theory of scientific discovery, and claims to resolve it by "an enlarged sociological conception." That is, "men of scientific genius, are precisely those whose discoveries, had they remained contemporaneously unknown, would eventually be rediscovered. But these rediscoveries would be made, not by a single scientist, but by an aggregate of scientists." The author also stresses the importance of multiple discoveries for the advancement of science since discovery does not automatically lead to incorporation into the domain of science; multiple discoveries increase the impact of the discovery. In describing resistance to the study of multiple discoveries, the emotional qualities of the subject and its conflict with scientific values are noted. First, dispassionate scientists have become very heated over disputes about priority of discovery (this is still a factor today and scientists are hesitant about having this sensitive area probed). Secondly, the emotional nature of the conflicts and the striving for prestige which motivates it, conflict with the objective nature of science. In a sense the values of science encourage these disputes since the "eureka syndrome"—the joy of first discovery—is basic to personal satisfaction. Professional status also depends on primacy. Thus, there is a great ego-involvement in defending the primacy of one's discovery.

PROMOTION OF UTILIZATION
RECOMMENDATIONS

Merton, Robert K. The role of applied social science in the formation of policy: A research memorandum. *Philosophy of Science,* 1949, 161–181. (I; Barriers to utilization, Research-practitioner gap, Organizational climate for utilization)

There has been no systematic study of the application or potential of social science. Study should be done of achievements and by-products of applied social science. The advice of the social sciences may be based on empiricism, practices based on cumulated research, or specific researches. More study needs to be done into the cultural, organizational and situational contexts in which social science is applied. The policy-maker frequently does not precisely define the problem presented for research. The definition of the problem may also be affected by the values of the policymaker or the researcher. The economic framework has an effect on the research. The areas and extent of the problems with which the social sciences have dealt should be examined. The gaps between research and practice should be studied. It should be determined to what extent the needs of the applied social science researcher affect his selection of methodology.

BARRIERS TO UTILIZATION
ANALYSIS/RECOMMENDATIONS

Michael, Donald N. Factors inhibiting and facilitating the acceptance of educational innovations. Washington, D.C.: Institute for Policy Studies, 1965. (Mimeo.) (I, IV, III; Rejection of innovation, Planning for change, Educational innovation)

Due to a lack of consensus on educational objectives, the basis for choosing among educational innovations is usually expediency. Several types of conflicting influences are discussed: parents who want their children to have college educations and high-status jobs and yet remain "just plain folks"; teachers may see their role as custodial rather than creative; teachers and administrators (often justifiably) view innovators as knowing little about education itself; internal and external structures influencing an institution may affect innovation; funding problems and power-politics affect the adoption of innovation; and the timing and appropriateness of the innovation itself are of course important. Disasters can facilitate innovations; innovators might plan some packages of progams with little chance of acceptance in a "business as usual" situation but which might be considered as solutions to a situation which has suddenly become critical. The invention of interfaces (change agents) is another way of facilitating innovation. A problem can be used as a lever to get appropriate groups involved in a consideration of change. The influence of the federal government in innovation is stressed, due to the vast funds they provide for education and since they must justify expenditures to Congress. The author concludes that "the enlargement of knowledgeable and committed concern about education may prove to be the most important education innovation of all."

USE OF GROUPS FOR CHANGE

THEORETICAL ANALYSIS/ SUGGESTIONS

Michaelis, Michael. A strategy for innovation. *Bulletin of the Atomic Scientists*, 1964, 20 (4), 19–23. (III, IV; Resistance to change)

The principles of systems engineering can be applied to problems of civilian innovations. Principles include appraisal of need, evaluation of alternative methods for reaching the desired goal, distinguishing between what is and what is not known, and identifying opportunities for and obstacles to the creation and evolution of systems which meet the functional needs of society. The value of defense-oriented corporations to civilian problems will probably come mostly from their concentrations of personnel with diverse skills. Congressional and executive (i.e., presidential) action may be needed to remove obstacles to full and imaginative use of industry management, labor, and government for technological innovation. Opportunities and risks for those involved in the change must be assessed. Experimentation with radical institutional changes should occur if analysis indicates that these changes may be desirable to the functioning of the systems.

EDUCATIONAL INNOVATION

THEORETICAL ANALYSIS

Miles, Matthew B. Innovation in education: Some generalizations. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 631–662. (II; Characteristics of innovators, Organizational climate for change, Model for change)

The author discusses innovation in education. Properties of an innovation such as outlays of time or money, ease of discard if it is unsatisfactory, built-in or supplemental implemention supports, and congruence with the potential adopting system, all influence adoption. Active innovators have contacts with coworkers; they tend to be in positions of authority and to be creative and intelligent, but they may also be impractical or emotionally unstable; group-sponsored innovations tend to be moderate and implementation is often facilitated by creation of a temporary system. Relevant characteristics of target organizations include the strength of the forces working for stability, and cultural attitudes affecting change. Strategies for change need careful planning and should include attention to diffusion, reduction of pressures on decision-makers, and use of linkage. Two models of change are given, one starting with development of interest in an innovation and ending with a post-trial decision to adopt, adapt, or reject it; the other starting with criticism of existing programs and ending with action on decisions about the innovation. Design of innovation requires a protected environment. Diffusion is best done dispassionately and credibly. Visits to observe the operation of an innovation aid potential adopters to evaluate the innovation. During adoption, the user needs generous support. Innovators are most effective if they have preexisting contact with those who make political or financial decisions about innovation. Innovations are often kept or discarded irrationally without evaluation of their effectiveness.

ORGANIZATIONAL CLIMATE FOR CHANGE

SUGGESTIONS

Miles, Matthew B. Planned change and organizational health: Figure and ground. In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced

Study of Educational Administration, University of Oregon, 1965. Pp. 11–34. (IV, I; Organizational factors involving innovation)

Preoccupied with the efficacy of the innovation itself, those concerned with innovation have tended to neglect the readiness of a specific organization to absorb an innovation. Healthy organizational factors related to innovation are: system goals are clear, reasonable, and possible; inter- and intra-organizational communication is relatively distortion-free, vertically and horizontally; distribution of influence is equitable, and subordinates can influence upward; resources, especially personnel, are used effectively and no-one feels they are fighting the organization; the organization is cohesive; it is innovative and tends to diversify itself; it is autonomous; it can make adaptations when environmental demands and organization resources do not match; and it has well-developed structures for sensing and dealing with problems. Educational organizations are inherently somewhat unhealthy and suffer from goal ambiguity, lay-professional control problems, and other difficulties. Specific methods for improving organizational health are suggested, including the use of consultants to train teams in effective problem-solving, workshops to assess role expectations and performance, and meetings to review group goals. All the suggested methods utilize self-study, relational emphasis, increased data flow, norms which function as a change agent, temporary system approach, and expert facilitation.

MIDDLEMAN ROLE
SUGGESTIONS

Miles, Matthew B. On temporary systems. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 437–490. (IV; Strategies for effecting change)

Temporary systems can be used to bring about change in persons, groups, and organizations. Permanent systems, carrying out routine activities, find it difficult to accomplish change. Temporary systems (workshops, consultant-client relationships, etc.) are effective mechanisms for inducing change, and they can be differentiated as to function of treatment, re-education, or education. Initial characteristics of temporary systems are: they expect to terminate at a specific time or after the occurrence of some specific event; initial goal is clearly defined; personnel classes to compose the system are closely specified; participants are on a cultural island; limiting the number of members and the physical location of the system facilitates goal accomplishment. Process characteristics include a narrowed time perspective and increased use of directed energy, redefined goals, participant freedom from usual role conflicts, encouragement of special communication, an increasing sense of involvement, and development of new behavioral norms and patterns. Output characteristics include continuing changes in individuals' attitudes, knowledge, and behavior, altered interpersonal relationships, and action decisions. Problems associated with temporary systems are: participants may feel overloaded and need decompression time; unattainable goals may be sought; demanding process skills may not be provided; short-term isolation may generate long-term alienation; and linkage failures between the temporary and permanent systems may nullify temporary accomplishments.

MODELS FOR CHANGE
CASE STUDY ANALYSIS

Miles, M. B., Hornstein, H., Callahan, D. M., Calder, P. H., & Schiavo, R. S. The consequence of survey feedback: Theory and evaluation. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 457–467. (IV; Strategies for effecting change, Utilizing knowledge, Evaluation of innovation, Introducing innovation, Rejection of innovation)

This article describes and evaluates an effort to use the feedback of survey research results to administrators of a school system as a way of inducing organizational change. Survey feedback is a process in which outside staff and members of the client organization collaboratively gather, analyze and interpret data that deal with various aspects of the organization's functioning and its members' work lives. Using the data as a base, corrective alteration of the organizational structure and the members' work relationships is attempted. Survey feedback has three components: (1) data are presented; (2) meetings of various groups occur; and (3) in the course of these meetings, staff and, eventually, clients begin to analyze the process of their interaction. This hopefully leads to attention to and acceptance of the data, liking the group and its activities; clarification of clients own and others' positions; practice of new behaviors; and development of norms which support open, collaborative problem-solving. Research is presented on a survey feedback program that was developed for a small school system. The conclusion is that the survey feedback program did begin a process of change followed by regression with the net effect that no durable changes were made.

CHANGE AGENTS

CASE STUDY ANALYSIS

Miller, Peggy L. *Change agent strategies: A study of the Michigan-Ohio Regional Educational Laboratory.* (Doctoral dissertation, Michigan State University) Ann Arbor, Mich.: University Microfilms, 1968. No. 68–17, 112. (III, IV, II; Organizational change, Planning for change, Strategies for effecting change)

This project studied planning and development activities of the Michigan-Ohio Regional Educational Laboratory. Literature on diffusion of innovations and change process was reviewed. Seven criteria were developed as major change agent strategies: (1) Change agent should identify characteristics and needs of the client system and base plans upon them. (2) Change agent should seek, and play a major role in the establishment of rapport and the building of mutual trust and respect between the client system and itself. (3) Change agent should view the change process as a mutual, collaborative, reciprocal undertaking between client system and itself. (4) Change agent should identify key leaders, formal and informal, in the client system, and work through them. (5) Change agent should seek continual self-improvement in performing its role. (7) Change agent should teach the clients to be their own change agents, to understand process of change, to develop self-renewing behavior. Michigan-Ohio Regional Educational Laboratory carried out activities indicating recognition of effective change agent strategies. Recommendations for institutions include: (1) Build organization on its program instead of common practice of building organization and then fitting program into the structure. (2) Keep a running assessment of needs, characteristics, and desires of those served, on a permanent basis. (3) Maintain a method of keeping in touch with researchers in the fields of diffusion of innovations and change. The above change agent strategies must be reflected in planned change.

UTILIZING INFORMATION/KNOWLEDGE

ANALYSIS/RECOMMENDATIONS

Moore, Dorothy N., et al. Data utilization for local mental health program development. *Community Mental Health Journal,* 1967, 3 (1), 30–32. (I, III, IV; Selecting information, Gathering information, Research-practitioner gap)

If program development activities are to meet the needs of those they serve, greater emphasis must be placed on the collection and utilization of data for *local* planning. There is a lack of technical knowledge as to what data are most relevant to local program development; skills for appropriate utilization of data have not been fully developed. Success of local service program often depends on a significant proportion of resources being devoted to this continuing evaluation and planning function. Data collected must (1) be determined by the objectives of each program, and (2) meet the criteria of scientific method. Although the ultimate objective of any mental health program is eradication of mental illness and enhancement of mental health, there are intermediate objectives such as continuity and comprehensiveness of care, utilization of all appropriate personnel and interagency collaboration. Emphasis must be placed on defining the mental health needs of an entire community rather than on certain traditionally collected information on patients. A systematic approach to data collection is presented. A special difficulty in appropriate data utilization is reflected in the frequent separation of those persons who are the collectors and analyzers of data from those who make program decisions. Some recommendations: (1) In the design of data systems high priority should be given to local planning and development; (2) Staff budget should be provided local planning; (3) State and federal governments should help strengthen local program development by increasing consultation, stimulating research, exploring new ways to use data, and supporting the training of individuals to apply planning skills; (4) Local mental health administrators should establish planning staff through State community mental health act funds and recent federal legislation for staffing community mental health centers; (5) Mental health data systems should be expanded to include information available through other data-gathering systems in the community; (6) Mental health planning should collaborate with other community planning efforts to pool resources and activities; (7) National Institute of Mental Health should disseminate case studies in data utilization for local mental health program planning.

PROMOTION OF UTILIZATION RECOMMENDATIONS

Moriarty, Edward J. Summary of small group recommendations. *Communication, Dissemination and Utilization of Rehabilitation Research Information.* Washington, D.C.: Joint Liaison Committee of the Council of State Administrators of Vocational Rehabilitation and the Rehabilitation Counselor Educators, Department of Health, Education, and Welfare, 1967, Studies in Rehabilitation Counselor Training, No. 5. Pp. 72–73. (III, I; Research-practitioner collaboration, Utilizing information/knowledge, Planning for change, Attitudes concerning change in rehabilitation field)

The author summarizes the conclusions of small discussion groups at a rehabilitation counselor training conference. The recommendations concerned four broad areas: general activities of rehabilitation agencies, agency attitudes to proposed and current research, information storage and retrieval, and dispersal to targets. Agencies should seek closer ties with universities when formulating activity programs, and cooperative mobile research and innovation teams should be established. Activity planners should pay careful attention to research results, and they should remember that research findings are not always needed to justify attempts to help people. Agencies should coordinate research better, and the VRA should stick to the rehabilitation field. Advisory committees of State agency personnel and/or counselors should be formed to identify needed research. There should be specific budgets for operational research in State agencies, and labs to test new ideas should be established. Research proposal evaluation should include utilization criteria; relevance and payoff to counselors and involvement of counselors in research should be considered. Programs should plan to assess and evaluate results as they are achieved. Research is needed to determine how to increase receptivity to research ideas, and how to increase research utilization by counselors and supervisors. Priority should be given to development of storage and retrieval systems, and human values should not be ignored when rehabilitation information is computerized. Each agency should have a public educator, and testing labs should also serve as change agents. Getting the right information to the right people at the right time is very important; *Rehabilitation Record* should have a tear-out research section aimed at counselors, and the VRA should compile mailing lists to supplement those of R. & D. centers. Research seminars for practitioners should be established, counselors should be seen as targets for research utilization, and sensitivity training can be used to develop receptivity in target groups.

PLANNING FOR CHANGE

CASE STUDY ANALYSIS

Morris, R., & Binstock, R. H. Decisions confronting a planning specialist. *Social Service Review*, 1966, 40 (1), 8–14. (IV, II; Organizational change, Strategies for effecting change, Strategies for overcoming resistance to change, Resistance to change)

Some of the factors confronting a planning specialist are identified, and the alternatives available within the usual restrictions of the planner's freedom in refining goals are clarified. Desired change in the policy of a formal organization is used as a case example, and stages in the process prior to the first public move are elaborated: (1) to estimation of the extent of power that can be mobilized in support of the change (the planner has little in his own right), (2) specification of the character of the change desired by confronting the perennial tension between the ideal and the practical, (3) assessment of the feasibility of achieving the change, and (4) adjustment of the goal in terms of probable resistances and power available to overcome them. Attention to these steps should increase the chances of achieving maximum results from planning endeavors.

RESEARCH-PRACTITIONER RELATIONSHIP

SYNTHESIS/RECOMMENDATION

Nagi, Saad Z. The practitioner as a partner in research. *Rehabilitation Record*, July-August 1965, 1–4. (III; Research-practitioner collaboration, Research-practitioner gap, Utilizing information)

The partnership between practitioners and researchers is vital. Practice serves as the ultimate test of research techniques and theories. Practice based on the social sciences is crude compared to that based on physical science. Emotional implications of disability are not understood in rehabilitation work. The development of a comprehensive, dynamic theory of disability would require curriculum planning in the applied fields to tie researchers and practitioners, closing the gap between theoretical and applied research by exploring the implications of theoretical work, closing the gap between the availability and use of research findings, and establishing feedback to researchers about practitioners' experiences using results. To accomplish this, workshops, seminars, and unified career training programs are needed. Barriers to cooperation stemming from the conflicting orientations of researchers and practitioners are: controversy about the appropriateness of clinical vs. statistical inquiry; the practitioner's orientation to uniqueness which conflicts with a researcher's quest for patterns; the researcher's preference to consider information as tentative when a practitioner wants a solid informational base for action; and the difficulty of maintaining control groups in practice, since this is seen as hindering the provision of optimal services.

PROMOTION OF UTILIZATION

RECOMMENDATIONS

National Science Foundation. *Knowledge into action: Improving the nation's use of the social sciences.* Report of the Special Commission on the Social Sciences of the National Science Board, Report NSB 69–3. Washington, D.C.: U.S. Government Printing Office, 1969. (I, III; Disseminating information, Promotional diffusion)

The report recommends ways to use *social science knowledge for solving national problems.* Full advantage needs to be taken of social scientists' strengths. Agencies may not exist to act on knowledge, and knowledge is often rejected for several reasons: it may predict events but not give solutions, it may threaten personal security or views of individuals, or it may propose valid solutions which are too demanding of current resources. Professional schools should expose students to relevant social science knowledge, and more attacks on theoretical and practical problems should be made by scientists and professionals. Social science is often relevant to domestic federal policies. Social scientists should play larger roles on the President's Science Advisory Committee, the Office of Science and Technology, and the Council of Economic Advisors. Employment practices should allow regular paid leaves of absence for refresher courses or individual research. Linkage of existing data should be improved. Business and labor should use social science resources, as should community organizations and the public. Social science curricula in elementary and secondary schools should be improved, with improvements stemming partly from new research on how children learn social science concepts. Federal efforts should increase social science components of continuing education programs. A new linkage structure is needed, probably composed of institutes dealing with specific problems and establishing ties to all other agencies dealing with their particular problems.

COMMUNITY COOPERATION

FIELD STUDY

New, P. K., & Thomas, M. J. Alienation and communication among urban renovators. *Human Organization,* 1966, 25 (4), 352–358. (II, III; Research-practitioner gap, Promotional diffusion, Use of groups for change, Organizational climate, Opinions and attitudes concerning change)

A study was made of alienation and communication among urban renovators to describe the views of local ward politicians, urban renewal and toward each other. It is contended that the methodological and philosophical orientation toward urban renovation which motivates each of these groups is not communicated to the others; thus alienation results. Findings indicated that the main concern of politicians is maintenance of the status quo in the face of change. Clergymen also feel a sense of identity with neighborhood areas—their concerns range from moralistic approaches to a fairly objective assessment of the decline of some areas. Urban planners concentrate for the most part on physical planning. Social workers seem primarily concerned with group cohesion. It was found that there is a real lack of communication between the four urban renovator groups.

ADOPTION OF CHANGE

ANALYSIS/SYNTHESIS

Niehoff, A. H. The process of innovation. In A. H. Niehoff (Ed.), *Handbook of social change.* Chicago: Aldine, 1966. Ch. 2. (II; Strategies for effecting change, Diffusing information, Planning for change, Change agents)

Principles and factors affecting kind and rate of change are discussed, and socio-cultural change through time is analyzed, based on a study of innovative programs in various underdeveloped countries. To be successful, an innovator must have empathy and establish rapport with people, he must know the language and nature of the subculture, he must project an image of technical competence to the local community, and he must assess (and alter if necessary) the effect of his affiliations. He must communicate by informal means which use demonstration, personal contact, and feedback from recipients; formal communication and the use of audio-visual and mass media techniques are impersonal and do not allow feedback. Passive compliance does not really aid adoption; adaptation of familiar cultural practices is a better way to innovate than complete change. The change agent should utilize circumstances to time the introduction of an idea, he should be able to change plans if unforeseen difficulties arise, he must accomplish the change in a manner predictable to recipients, and he must establish a pattern of maintenance. Felt need is a strong foundation for change; it may be solicited, demonstrated, or latent, but ascertainable by the target group. Perception of practical benefits is a sound motivation for change; others are perceived status advantage, reward to induce acceptance and interest generated by the novelty of innovation. In planning and implementing an innovation the use of properly chosen traditional leaders is critical to success.

GATHERING INFORMATION
THEORETICAL ANALYSIS

Nimkoff, Meyer F. Obstacles to innovation. In F. R. Allen, et al., *Technology and social change.* New York: Appleton-Century-Crofts, 1957. Pp. 56–71. (I, III; Resistance to change, Barriers to utilization)

The author discusses two basic problems: the difficulties in adding to the existing body of knowledge, and reasons for the resistance to the diffusion of knowledge. Difficulties stem from the fact that there is no demand based on need for the solution of a problem, there is a lack of knowledge essential to its solution, and there is inadequate use of the mental ability of individuals and the population. Resistances to the diffusion of knowledge stem from the unclear usefulness and cost of an innovation, social inertia, social dislocations that will be caused by the innovation, and active resistance by those with a vested interest in the status quo.

PROMOTIONAL DIFFUSION
EXPERIMENTAL STUDY

Nunnally, J. C., & Bobren, H. Variables governing the willingness to receive communications on mental health. *Journal of Personality*, March 1959, 27, 38–46. (IV, III; Response to communication, Disseminating/diffusing information/knowledge, Strategies for overcoming resistance to change)

This article describes a study of the effect of message composition on the public's expressed preference for particular topics. Subjects were 288 members of a 400 member opinion panel which was representative of the United States in terms of demographic characteristics. People with less than 8 years formal education were excluded. Each subject was sent a package of eight messages containing combinations of high-low message anxiety, solutions given or not given and personal phrasing (written in the second person and describing effect on reader) or impersonal phrasing (written in the third person and describing effects on others). Mean ranks of 1–8 were determined for interaction between topics and message variables combinations. Significant differences were found in the interest created by different combinations. High-anxiety—no solution—personal phrasing created the least interest and no anxiety—solution—impersonal phrasing created the most. There is some evidence to support the belief that the results are relevant to high anxiety subject matter. With a topic less associated with anxiety than is mental illness, a combination of anxiety—no solution—personal phrasing might be necessary to create interest.

DIFFUSING INFORMATION
MODEL/SUGGESTIONS

Orr, Richard H., et al. The biomedical information complex viewed as a system. *Federation Proceedings*, 1964, 23 (5), 1133–1145. (III, I; Middleman role, Utilizing information, Research diffusion)

The *biomedical information complex*, whose goal is to provide information needed by and useful to any scientist, can be viewed as a system analogous to a living organism with five main parts. These parts are (exclusive of the operations controlling the system): generation and use of scientific information, oral communication, recording and distributing scientific information, document processing other than distribution (storage, retrieval, etc.), and information processing (abstracting, evaluating, modifying, and synthesizing information). Output channels, notably journals and meetings, are not considered as part of the system, and are agents of quality control by rejection of personnel and articles. Support for the system comes chiefly from the federal government. The information system model presented here should be studied to identify weak points where disruption can affect the whole system and to coordinate the system, to identify types of processors for different services and types of innovations useful to the system, and to provide a holistic approach to the problem of biomedical communication.

BARRIERS TO UTILIZATION
CASE STUDY ANALYSIS

Page, Howard E. Research utilization. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science*, Vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 126–135. (I; Promotion of utilization)

An attempt was made to utilize the research finding that further research was needed on the Human Engineering aspects of Naval carrier flight control. The history of this attempt is given in diary form over a 3-year period. Many factors are involved in utilization: organization and structure; responsibility and cognizance; coordination and communication; vested interests; the research administrator; the relationship of the scientist and his research to policy- and decision-making; and basic versus applied and operational research. Each of these factors is discussed in terms of the specific instance. Implications are made for the specific case and possible generalizations.

GATHERING AND DISSEMINATING INFORMATION
REVIEW

Paisley, William J. Information needs and uses. In C. A. Cuadra (Ed.), *Annual review of information science and technology*, Vol. 3. New York: Interscience, 1968. Pp. 1–30. (I, III; Promotion of utilization, Information exchange, Diffusing information, Technological information systems)

A highly technical review most applicable to researcher behavior and information exchange in research development, Paisley identifies ten interrelated systems affecting the scientist/technologist and his relationship to information: (1) scientist within his culture; (2) scientist within a political system; (3) scientist within a membership group; (4) scientist within a reference group (5) scientist within an invisible college; (6) scientist within a formal organization; (7) a work team; (8) his own head; (9) a legal/economic system; (10) a formal education system. Main points pertinent to research utilization suggest that engineers accept ideas in proportion to technical quality of the channels, and use information sources in proportion to accessibility or ease of use; maximum benefit may come from small units of information transferred rapidly to those who, at a given moment, need them; the work team is most significant information source for the technologist; technological "gate keepers" within an engineering laboratory who facilitate effective entry of information and its dissemination within organization: and judgment of success of an innovation should be withheld until innovation has time to "settle". The author expresses a concern about shallow conceptualization, i.e., the failure to consider full array of available information sources.

DIFFUSING INFORMATION

QUESTIONNAIRES/ANALYSIS

Panning, I. J., et al. *Survey and analysis of specialized science information services in the United States.* Columbus, Ohio: Battelle Memorial Institute, September 1962. (III; Gathering information, Classifying information)

Five-hundred-fifty-six questionnaires concerning the *location and activities of specialized science information centers* are discussed under seven major headings: history, growth, and location; services offered and user groups served; subject coverage; personnel and staffing; critical problems; methods of communication; and support. Money, staff, and facilities problems were considered more critical than information processing per se, although problems such as storage, retrieval, and classification of information also were mentioned frequently. Each subject area seemed to have its own particular set of problems. Methods of communication include phone, teletype, mail, and personal contact. About half of the centers had some Federal or State support; the source of support had no bearing on the services offered, which were usually similar.

ADOPTION OF INNOVATION

MODEL/EXPERIMENTAL STUDY

Pareek, U., & Chattopadhyay, S. N. Adoption quotient: A measure of multipractice adoption behavior. *Journal of Applied Behavioral Science,* 1966, 2 (1), 95–108. (I, II; Characteristics of adopters, Models for change)

The definition of adoption is re-evaluated to define measurable variables for an instrument "to quantify adoption behavior in an individual." Adoption has two stages: cognition, which involves knowledge of an innovation and the decision to try it, and behavior, or the actual use of the practice. Other relevant variables are: potential (maximum possible use of the innovation), extent (degree of actual adoption), time (early or late adoption), consistency (continued use of the practice), and weight (value of a practice that relates to its difficulty). An adoption quotient (AQ) was devised from these variables and its validity was tested by finding 10 high and 10 low AQ score farmers in India and then having three agricultural specialists rate the 20 farmers, without knowledge of their AQ scores. The judge's ratings and the AQ scores had a correlation of $r = .80$, which is significant at the .01 level.

DIFFUSING INFORMATION

SYNTHESIS/RECOMMENDATIONS

Parker, E. B., & Paisley, W. J. Research for psychologists at the interface of the scientist and his information system. *American Psychologist,* 1966, 21, 1060–1071. (III, I, II; Organizational climate for linkage, Promotion of utilization)

Applied research workers depend heavily on informal information networks: interpersonal systems, "accidental" acquisition of useful information, "inefficient" and "irrational" information seeking, etc. This is more true of those whose jobs rest on completed rather than continued training. Hermer found that "pure" scientists were "literature dependent" and that "applied" scientists were "colleague dependent" for information, and that the latter distinction applied particularly to medical scientists. Accidental discovery of information in rich environments, with *many* dissimilar colleagues, unrestricted long-distance telephoning and travel is especially useful to applied scientists. Theories of information use are needed, and data should be collected as bases for such theories by using questionnaires, observation, sociometric analyses, and various other methods.

CHARACTERISTICS OF INNOVATIVE PERSONS

EXPERIMENTAL STUDY

Paul, William J., Jr. *Psychological characteristics of the innovator.* (Doctoral dissertation, Western Reserve University) Ann Arbor, Mich.: University Microfilms, 1965. No. 66–8022. (II, IV; Adoption of innovation, Opinions and attitudes in change)

The primary purpose of this study was to explore the relationship among several social psychological and motivational variables and innovation. Subjects in this study were divided evenly into two groups on the basis of their adoption or nonadoption of the Ericophone, a consumer good which was thought to reflect innovation. Six measuring devices were used within the framework of an interview situation to obtain the needed data. These devices measured the variables of age, education, socioeconomic status, source of original information about the phone, perceived innovativeness, group membership, leadership, aspiration level, achievement orientation, self-concept, and the psychological need for succorance, affiliation, deference, lability, change, achievement, autonomy, exhibition, self-control, and others. Mean scores for the adoptor and nonadoptor groups were compared for each of the variables. Because only source of original information, the need for order, and perceived innovativeness differentiated the two groups, it was thought that adoption of the Ericophone did not provide an adequate criterion for defining an innovator group. To correct this subjects were redivided into high and low innovator groups on the basis of their perceived innovativeness and the same comparisons were made for the new groups. Correlations were also computed between the various need scores and perceived innovativeness. The data suggested that the innovator can be described as a sociometric isolate with a higher aspiration level than the noninnovator. He is an individual who appears to be unable to tolerate consistency and routine and is delighted by new and different things. To some extent he adopts new products because of the attention they attract to himself and he is inclined to be impulsive about their adoption. The innovator might be younger in age and have less education than the non-innovator. It may be that he seeks change in his experience and is more self-confident, aggressive, and less deferent than his counterparts. Perhaps the most important conclusion that can be drawn from this research is that the innovator can be, and is probably, best differentiated along personality dimensions.

TECHNOLOGICAL RESEARCH
SUGGESTIONS

Pauling, Norman G. Some neglected areas of research in the effects of automation and other technological change on workers. In W. A. Hill & D. Egan (Eds.), *Readings in organization theory: A behavioral approach.* Boston: Allyn & Bacon, 1966. Pp. 587–600. (IV; Gathering information, Process of change, Organizational climate)

Pauling suggests further study in four large areas in which *research on the effects of automation* has not been attempted or is in conflict. These research areas center on the need to increase knowledge on: (1) the effects on workers of changes in the work role and working conditions, (2) factors affecting occupational choice, commitment and adjustment to changes in the work role, (3) effects of technological displacement on workers, (4) changes in work role and working conditions.

PLANNING FOR CHANGE
ANALYSIS

Pellegrin, Roland J. The place of research in planned change. In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1965. Pp. 65–75. (I; Promotion of utilization, Barriers to utilization, Educational research)

Planned change in education requires reliable research directed to nature of changes, method, and timing of innovation introduction. Based on broad experience, the author observes that educational decision-makers lack appreciation and understanding of nature and value of research and rely heavily on authority to justify existing practice and policies; intuition and common sense seem to be major premises for innovation. Obstacles to be overcome before educational research can provide reliable knowledge on which to base policy, practice and innovation in education are: negative attitude of teachers and administrators toward research; low quality of much existing research; the poor understanding of nature and functions of "theory"; confusion about relationship between empirical fact and values. The author feels that for educational research to be reliable enough to be used as a basis for practice, it must be either (a) testing of well defined but isolated hypotheses, or (b) research directed by systematic and integrated theory. Need exists not only to increase numbers of researchers and dissemination of findings widely, but there is a larger task of developing respect for and sympathetic attitude on part of armies of educational practitioners.

MIDDLEMAN ROLE
DESCRIPTION

Phillips, B. A director examines the director's role. *Social Work,* 1964, 9 (4), 92–99. (IV, III; Organizational climate, Diffusing information/knowledge, Mental hospital innovation)

The director of a social service department in a medical setting functions in a middle-management role with responsibilities to the hospital administration, his own staff and profession, and the community. To fulfill these responsibilities he must be skilled in the techniques of administrative consultation and collaboration. His general aim is twofold: (1) establishment of a climate in which a program supportive of sound policy procedures and practices can operate, and (2) development of lines of communication on all levels through which ideas, information, and knowledge can be exchanged.

RESISTANCE TO CHANGE

THEORY

Pi-Sunyer, O., & DeGregori, T. Cultural resistance to technological change. *Technology and Culture,* Spring 1964, 5, 247–253. (IV; Technological change, Adoption of innovation)

This short reply to an earlier article argues against an engineer's flat claim that "Tools, in sharp contrast to ideas, are widely welcomed everywhere" (Peter F. Drucker, "Modern Technology and Ancient Jobs," *Technology and Culture,* 4 (3), 278). "Tools are not autonomous artifacts, they have their 'ecology.' They are elements in three distinct but related complexes: technological, cultural and environmental. Tools are related to other tools in a problem-solving process. Tools also imply skills which imply behavior. Finally, because tools are part of a problem-solving process, different climatic or cultural environments create different problems whose solutions require different tools or different uses of the same tools. To distinguish between ideas and tools, as Dr. Drucker does, and to assume that one will be borrowed without the other, is a misunderstanding of both culture and technology."

EDUCATIONAL INNOVATION

RECOMMENDATIONS

Ponsioen, J. A. Education as a method of development. In J. A. Ponsioen (Ed.), *Social welfare policy II.* The Hague: Mouton, 1963. Pp. 89–99. (IV; Planning for change, Strategies for effecting change)

To facilitate economic development in non-Western countries, the author proposes a new style of education. He points out that most Western textbooks simply do not apply to non-Western civilizations; these countries must regain self-confidence lost in periods of colonialism and develop their own appropriate educational systems. Basic personality foundations should be laid for the young in the areas of civics (organized self-help), self-reliance, hygiene, job-oriented education geared to the future needs of the country (especially for "low-status" jobs), and concerted efforts should be made to include young boys as well as girls in primary education. Two kinds of secondary education should exist: free training for utilitarian, middle-ranking jobs; and pre-university training awarded on a scholarship basis to qualified students. Additional technical education in the particular fields of agriculture, handicrafts, and industry should be encouraged, with emphasis on how to teach these skills to others.

RESEARCH-PRACTITIONER RELATIONSHIP

CASE STUDY

Poser, E. G., Dunn, I., & Smith, R. M. Resolving conflicts between clinical and research teams. *Mental Hospitals,* 1964, 15 (5), 278–282. (III, I; Conflict resolution, Communication and collaboration, Role recognition, Barriers to researcher-practitioner relationship)

Conflicts between needs of researchers and the aims of clinicians limit research in mental hospitals at least as often and severely as insufficient funds. This study, practice-based research seeking to compare outcomes of group therapy by trained and untrained therapists, reveals that the clinician often fails to realize that research worker does have as deep and imperative commitment as his own; and that the commitments of the two are often antithetical. Resolution of conflicts emerges through: interpretation by researchers of validity of research needs and long-range gain research would provide clinicians; through researchers' recognition and acknowledgement of existing practice of clinicians, pointing out how results of research would extend and widely advance use of these successful practices. Continuing interpersonal communication between research and clinical teams is essential to overcoming resistances to research taking place in the clinicians' settings. The article emphasizes the importance of continued communication between researchers and practitioners in the implementation and utilization of innovation.

TECHNOLOGICAL INNOVATION

THEORETICAL ANALYSIS

Price, W. J., & Bass, L. W. Scientific research and the innovative process. *Science*, May 1969, 164, 802–806. (II; Processes of innovation, Research-practitioner relationship)

Basic Science is an essential part of the innovative process. The dynamic interface between the scientific and technological communities is the focus for studying the innovation process. Several studies are cited to support this view. The entrepreneurs of the innovative process usually belong to the technological sector while the persons familiar with the necessary scientific understanding belong to the scientific sector. "Coupling" is the name given to the nature and mechanisms of the interactions between the generators and users of information. Classification into four types of coupling is based on the intensity of the interaction. They are described and their implications for the innovation process are discussed. It is hoped that this understanding will lead to active promotion of collaborative efforts.

CLASSIFYING INFORMATION/ KNOWLEDGE

RECOMMENDATIONS

Profet, Karen. Document storage and retrieval. *SDC Magazine*, September 1967, 10 (9), 1–11. (I; Selecting information, Utilizing information/knowledge)

The largest problem confronting developers of information retrieval systems is that of labeling and *indexing information.* Principles of documentation remain essentially the same regardless of subject matter; it is the labels, or condensed representations of the contents of documents, which must be tailored to the subject. Labels must: (1) describe the document and (2) be concise enough that an entire collection can fit into a computer and yet be sufficiently informative for the user to judge whether or not a particular item pertains to his interest. Techniques for indexing—"the heart of document retrieval,"—have attempted to solve this problem. As any document can be indexed by numerous attributes, the issue is one of relevance to many needs of users. Three types of indexes are currently in use: idea classification, subject headings, and key term vocabularies. This last, also called *"uniterm vocabularies"* is most suited to automation. Here the starting point is the information in the document itself, rather than trying to fit the information into preconceived categories. The Keyword-in-Context (KWIC) System takes this principle one step further by auto-abstracting-selecting key words from a document and printing out the sentences with the higher density of these words. The words surrounding the key words act as modifiers. KWIC also works on the theory that document titles are effective indicators of content, and will print out lists of titles on specific topics and related areas. Most important in any system is that user needs are satisfied—the most "advanced" systems are otherwise meaningless. User studies are part of a new branch of research designed to discover and relate those needs to libraries and indexing systems.

ORGANIZATIONAL FACTORS INVOLVING INNOVATION

THEORY AND PRINCIPLES

Pugh, D. S. Modern organization theory: A psychological and social study. *Psychological Bulletin,* 1966, 66 (4), 235–251. (IV, II; Organizational change, Opinions and attitudes concerning change, Organizational climate for change)

Organization theory is the study of the structure and function of organizations and the behavior of groups and individuals within them. It draws primarily on the disciplines of psychology and sociology, but also on economics and to a less extent on production engineering. It is of particular interest to those psychologists who believe that the proper study of mankind is man outside the laboratory. The statistical method is substituted for the laboratory one. Studies of the factors affecting motivation to perform, the effects of personality on role behavior and the transmission of information along communication channels benefit from study of people in a real situation. The social role of the worker is far removed from that of the laboratory subject. There is a difference in sanctions and motivations with consequent divergence in performance. The main lines of development affecting conceptualization of organization theory can be traced under six headings: (1) management theorists, (2) technology theorists, (3) structural theorists, (4) group theorists, (5) individual theorists, and (6) economic theorists. The views, concepts and literature of each group are described, analyzed and evaluated in a survey of behavioral science relating to organization theories. Current work is then reviewed and lessons drawn. Chief of these is that organizational theory must be left free to find its own problems and develop its own formulations unrestricted by the need to choose managerial problems for study rather than scientific ones. Organizational theory must be unfettered by artificial boundaries between established disciplines.

RESPONSE TO INNOVATION

CASE STUDY ANALYSIS

Putney, S., & Putney, G. J. Radical innovation and prestige. *American Sociological Review,* August 1962, 27, 548–551. (II; Innovation and organizational equilibrium, Characteristics of innovative persons)

Barnett's hypothesis that "radical departures, those which exceed the bounds of expectability for their originators, must be advocated at the risk of prestige loss" is examined and questioned in this brief case study of a Mexican village. A sociometric questionnaire administered to all households heads in the village revealed the existence of a tightly knit clique of five men which stood at the apex of the (village) prestige hierarchy. All these men are wealthy, have held public office and are looked to for advice. They also innovate not only in the economic and educational realm which might be within the "bounds of expectability" but also in the realm of religion. Four of the five members of the clique are Spiritualists, having radically broken with the Catholic tradition; the fifth member is an agnostic. Among all villagers, even the Catholics, the Spiritualists are viewed as progressives rather than heretics. The authors conclude that the prestige of the clique did not just survive their radical nonconformance, but was in fact derived from their reputation for broad innovations which transcended "the limited potentialities of the traditional culture." In general, Barnett's assertion may hold in social systems which are in "equilibrium or disintegration, but it is inappropriate and misleading when applied to societies undergoing transformation."

COMMUNICATION
SURVEY

Ramey, James W. *Television in medical teaching and research.* Washington, D.C.: U.S. Government Printing Office, 1965. (I, III; Educational diffusion, Disseminating information, Educational innovation)

The article summarizes a survey of *medical schools using television* in 1961–1962, and of major articles since 1947 on the *use of television in medicine.* Television has been used increasingly in medical schools since 1949. Publicly supported schools tend to spend more on television installations than private schools. "Of some 1,500 departments in the 47 schools (surveyed) which had television, only 179 used the facilities, and only 7 of these were departments of postgraduate medicine or continuing education." Most used TV only in basic or clinical sciences or both. The author outlines ways TV can be helpful to medical education, assumes that its use will increase and reduce professors' burdens, and concludes that ". . . the success of television in medical teaching depends less on the type of equipment or the amount of capital expenditure than on who is responsible for its operation and who introduced it in the first place." Users of this article should remember that its focus is on the general use of educational television in medicine, and that no attempt was made at qualitative evaluation of programs.

ADAPTATION OF INNOVATION
EMPIRICAL STUDY

Raphael, Edna E. Community structure and acceptance of psychiatric aid. *American Journal of Sociology,* 1964, 69, 340–358. (II; Characteristics of innovative persons, Rejection of innovation)

This study examined the rate of use of an outpatient psychiatric clinic. Rate of use was found to be independent of prevalence of mental illness within the sections of the city studied. Viewing the rate of use as an indication of the acceptance of a social innovation, it was found that the rate of acceptance was dependent on two independent but interesting variables, the structure and culture of the community. Structure referred to the *tightness,* low rate of migration, and *looseness,* high rate of migration, within the different sections of the city. Culture referred to the *compatibility,* high level of education and *incompatibility,* low level of education, within the sections of the city. The highest rate of use of the clinic was found to be in the section that exhibited both looseness and compatibility. The lowest rate of use was found in the section which showed tightness and incompatibility.

RESISTANCE TO CHANGE
SUGGESTIONS

Reddin, W. J. How to change things. *Executive,* June 1969, 22–26, (IV; Strategies for overcoming resistance to change)

In order to change things, resistance to change must be overcome. Seven techniques for overcoming resistance are: *diagnosis, mutual objective setting, group emphasis, maximum information, discussion of implementation, use of ceremony (ritual), and resistance interpretation.* The techniques of diagnosis, mutual objective setting and group emphasis all involve participation in different aspects of the change; they are specifically designed to give those affected by the change an opportunity to have some influence on the direction, nature, rate and method of introduction of the change. (The process of making the diagnosis leads to an increased awareness of what is wrong and can lead naturally to steps to change the situation.)

When a change has been announced the maximum possible information should be distributed about it; resistance to change is almost always lower if the objectives, methods, benefits and drawbacks of the change are made clear to all concerned. Resistance to change is reduced if there can be agreement on the rate and method of implementation (what first steps should be, what the rate of change should be, the appropriate sequence of changes, and who should be involved in what elements of implementation). It is suggested that the use of ceremony or ritual is an effective means of focusing on clearly established progressions from one role to another; change becomes easier to accept if adaptation is facilitated through utilizing ritual or ceremony (start of new system, retirement, promotion, etc.). Finally, interpreting resistance is a key step in organizational change agentry. When people understand why they have been resisting a change, the resistance usually decreases or at least becomes more rational.

MIDDLEMAN ROLE
EMPIRICAL STUDY

Rehder, Robert R. *The role of the detail man in the diffusion and adoption of an ethical pharmaceutical innovation within a single medical community.* (Doctoral dissertation, Stanford University) Ann Arbor, Mich.: University Microfilms, 1961. No. 61-1037. (III, II; Pharmaceutical innovation, Adoption of innovation, Processes of innovation)

The objective of this study is to analyze the part played by the pharmaceutical company's service representative, the detail man, in the diffusion and adoption of a new prescription product within a single medical community. Ten major ethical pharmaceutical companies participated in the field work. The development and modification of the new product's marketing program is followed from its planning through actual introduction of the pharmaceutical innovation in the selected medical community. Particular emphasis is directed to the analysis of the interrelationships and functions of the numerous communication and opinion formation factors operating within the medical community. The detail men's information function is indicated to be of primary significance in the introduction and diffusion of the ethical pharmaceutical innovation within the medical community. The detail men expedite communication by relaying information from both mass and interpersonal media and by filtering this information to support their new product. The continuing interpersonal relationships established by the detail men within the medical community facilitated their new product promotion by (1) providing greater access to the physician, (2) influencing the prescription decisions of certain physicians, and (3) providing control information on the physician's actual prescription choice. The existence of conflicting sets of role expectations for both the physician and the detail man is indicated. The utilization of the detail men's established medical relationships revealed many nonobjective factors influencing physician's prescription decisions which were significantly deviant from previous professional stereotyped responses to nonmedical inquiries. The detail men's unique interaction with both mass and interpersonal medical communication channels further suggests that factors influencing the physician's opinion formation cannot be effectively evaluated by statistical sampling of respondents treated as isolated individuals.

STRATEGIES FOR EFFECTING CHANGE
RECOMMENDATIONS

Reiff, Robert. Mental health manpower and institutional change. *American Psychologist,* 1966, 21 (6), 540-548. (IV, II; Community cooperation, Change agents, Organizational and institutional change, Planning for change)

Strategies for meeting the mental health services needs of low-income groups and the poor are discussed. It is asserted that meeting this need is not primarily a problem of manpower but of ideology; institutional changes are required in order to promote effective services. Present services are not fully utilized by the poor; in particular, the community mental health program is one which promised revolutionary changes, but has in fact only perpetuated a system which does not accommodate itself to the needs of lower income groups. Low-income patients are alienated by the present ideology and technology of mental health professionals; services are not directed toward immediate, practical techniques of problem-solving required by the poor. In addition, the fee-for-service orientation of most mental health professionals serves to alienate the poor, as do differences in values, goals and life styles between therapists and their low-income patients. The problems of manpower which do exist are inextricably intertwined with the problem of institutional change. Mental health professionals trained in traditional methods are no longer competent to fulfill many of the new roles necessary to provide improved services to the poor. There is, in particular, a need for a "human link" between the professional and the poor. The author believes that non-professionals, who can establish peer relationships, take an active part in the patient's life situation, and empathize with his life style, are ideally suited to serve in this role. Training and utilizing such nonprofessionals will require major institutional change; changes in goals and institutional structure will also be required to meet the need for a new kind of professional, a man who is skilled in changing social systems to improve the psychological effectiveness of all people in society to deal with the problems of living.

ORGANIZATIONAL CHANGE
CASE STUDY

Rein, Martin. Organization for social change. *Social Work,* April 1964, 9, 32–39. (II, IV; Locality-independent style, Locality-responsive style, Strategies for effecting change)

Four case studies of National Planned Parenthood Federation affiliates (two judged effective and two ineffective by a national rating committee) examine the kind of internal structure which permits a social welfare organization to carry out a controversial (innovative) function. Among affiliates studied, community acceptance (or opposition) and interagency cooperation were not relevant factors in acquiring resources or contributing to their overall effectiveness. It is suggested that those organizations operating in controversial problem areas, capable of assertive pursuit of their goals do not follow a locality-responsive style. This study is of interest for its findings run counter to the customary advocacy of gaining community acceptance for change through consensus and cooperation for it is suggested that a locality-independent style is more congruent for controversial organizations.

PLANNING FOR CHANGE
DEMONSTRATION RESEARCH/ANALYSIS

Rein, M., & Miller, S. M. Social action on the installment plan. *Trans-action,* 1966, 3 (2), 31–38. (IV; Models for change, Strategies for effecting change, Social change)

Based on analysis augmented by considerable case material, the authors undertake critical evaluation of demonstration research as an instrument of social change. Findings point to a number of assets (fashionable, politically attractive, rationally appealing) and liabilities (often postpone change, real problem hardly touched, etc.) found in the demonstration project. Before success on a small scale can be translated as a means of change in major institutions, crucial questions must be raised: what kind of influence is demonstration project planned to have? Is continuity envisioned? What target groups to be influenced? How influence to be exerted? Concrete suggestions to improve demonstration projects as agents of change include: greater clarity of purpose should be pursued, relevance to social problems and questions of social policy; funders must stay with project (even when going gets rough); need for new methods of reporting and accountability; program cannot promise everything (must make choices); adaptation must be built into demonstration design; demonstration staffs must be prepared for conflict, and learn to live with it; and research must be relevant to all social needs (part of an overall pattern).

RESEARCH-PRACTITIONER RELATIONSHIP

ANALYSIS/RECOMMENDATIONS

Reiser, M. F. Research training for psychiatric residents: General problems. *Archives of General Psychiatry,* 1961, 4, 237–246. (III, I; Promotion of utilization, Research-practitioner gap, Research dissemination)

The development of the student is an internal maturational growth process; the essence of scientific study is observation. Psycho-analytic training or at least personal analysis is highly desirable for the psychiatric resident in that it provides internal study and self-observation. The institution of a research training program requires that there be: (1) adequate training staff, space, equipment and patients; and (2) residents interested in joining research teams which might lead to independent research by residents. Residents who are interested but not familiar with ongoing techniques of established projects are often refused positions because the research staff is caught between the advantage of hiring an eager resident and the disadvantage of the possibility of hampering the development of a project with unknowledgeable personnel. Curriculum planning includes: (1) determining what is to be included in research training and (2) when in the resident's career such training should be initiated. An indispensable part of every research fellow's training is thorough indoctrination in the philosophy of science and logical issues involved in scientific procedure and development of theory; and further, these should be taught by both precept and percept and not be left to chance. It is the supervisor's responsibility to encourage the resident's innate capacity to be curious and imaginative. Psychoanalytic training seems a necessary part of a resident's curriculum. More funds should be provided to further such training.

EVALUATION OF INNOVATION

EXHORTATION

Reynolds, M. C. A crisis in evaluation. *Exceptional Children,* 1966, 32 (9), 585–592. (IV; Educational innovation, Organizational and institutional change)

Under recent Federal legislation $750 million was appropriated to support new school programs for educationally deprived children. The rapid expansion of specialized school programs calls for innovation and systematic program evaluation. There is some danger that these evaluation procedures may slip to perfunctory levels. During the last one hundred years professionals have tended to desert the field of education of the handicapped. Only recently has there been a return to the task of educating all children. Despite some technical and psychological problems an accounting of the results must be made.

EDUCATIONAL INNOVATION
CASE STUDY

Richland, Malcolm. *Traveling seminar and conference for the implementation of educational innovations.* Santa Monica, Calif.: System Development Corporation, 1965. (Technical Memorandum Series 2691). (I; Traveling seminar and conference, Dissemination method, Innovational behavior, Promotion of utilization)

Four groups of approximately thirty educators each, representing four regions of the United States forming a traveling seminar visited selected schools where significant innovations had been introduced and been in operation 1 year. Each tour was led by well-known and respected educator (outside change agent) who served in the role of interpreting experimental foundations on which the specific innovation was based, followed by a conference on dynamics of educational change. The evaluative phase of the study was carried out 1 year later through onsite visitations to participants' own schools, comparing collected data on innovational behavior and attitudes toward innovation from the tour participants and an equal number of school personnel (controls group) who did not visit innovational schools. Findings conclude that: traveling seminar and conference are highly effective dissemination method for stimulating and facilitating educational innovations; the attitude of the local superintendent is significant variable in the introduction of innovations in school districts. It is recommended that the traveling seminar and conference technique be expanded. Findings are confirmed of other demonstrations concerning the effectiveness of site visits as a means of innovation diffusion.

PROMOTION OF UTILIZATION
CONFERENCE REPORT

Riley, P., Hooker, S., & Masar, N. Introducing RUS: A link between research and service. *Rehabilitation Record,* November-December 1968, 22–24. (III; Research utilization specialist, Change agent, Middleman role)

Introducing a new concept to the field of rehabilitation—the Research Utilization Specialist (RUS)—to act as a change agent, this article outlines the expected role of a new position designed to close the gap that still exists between research and practice in the field of rehabilitation. Findings of two conferences (1966 and 1968) concerned with establishing this new position are reported providing conclusions that the RUS has the difficult job of functioning effectively with researcher and practitioners, that the RUS, as liaison among State agency, regional office, and research program will translate research recommendations into programs which serve a larger number of clients more effectively.

EDUCATIONAL INNOVATION
SURVEY/RECOMMENDATIONS

Riley, J. W., Jr., & Riley, M. W. Sociological perspectives on the use of new educational media. In *New teaching aids for the American classroom.* Stanford, Calif.: Institute for Communication Research, Stanford University, 1960. Pp. 27–49. (II, IV; Organizational factors involving innovation, Models for change)

The paper diagrams the interrelationships between members of three groups: the school, the community, and the "outside." The "outside" consists of the teaching profession and mass media. The teaching profession affects teachers, who are part of the school system and, within that, part of the teacher-student relationship. Mass media affect the community. The community consists of formal education groups and primary groups, which affect teachers, and the family and peer groups, which affect students. The school consists of formal school groups and primary groups which affect teachers, and formal school groups and peer groups, which affect students. And finally, students and teachers interact. Thus any innovation in one part of the system affects the entire system. The paper details the primary aspects of the system where innovation is likely to occur: teacher-student relationships, the student's network, the teacher's network, and the entire system. There is an extensive literature review and suggestions for new research.

PROMOTION OF UTILIZATION

SURVEY/ANALYSIS

Roberts, A. O. H., & Larsen, J. K. *Effective use of mental health research information.* Palo Alto, Calif.: American Institutes for Research AIR–820, January 1971. (Final Report for National Institute of Mental Health, Grant No. 1 RO1 MH 15445.) (I, II, III; Processes of innovation, Characteristics of innovative persons, Mental health care innovation)

Interview and questionnaire techniques were used to identify empirically those conditions which facilitate or inhibit utilization of mental health research and to derive implications for means to increase information use. Data were collected first by interview with staff members in five mental health institutions, then in tryout questionnaires sent to institutions in 17 western states, and ultimately in a questionnaire survey involving 207 institutions throughout the country, with responses received from 588 innovators, 97 librarians and 88 administrators. *Findings:* Mental health care innovators get their ideas from the work or experience of other practitioners, rather than from researchers. Personal contact with well-informed colleagues is the primary source of the innovative idea; formal communication channels such as books, journals or speeches proved to be relatively unproductive. Important channels for colleague contact included staff meetings, formal and informal consultation and discussion, site visits, seminars and colloquia. Library facilities of an institution are importantly related to innovation. Contact with an in-house research department had a positive value in state MI but a negative value in state MR. This investigation concluded that personal interaction is the most important variable in increasing information utilization; if the ideas which come from such interaction provide the catalyst for information-seeking behavior, other sources of information will be used.

RESEARCH-PRACTITIONER RELATIONSHIP

ANALYSIS

Rodman, H., & Kolodny, R. Organizational strains in the researcher-practitioner relationship. In A. W. Gouldner & S. M. Miller (Eds.), *Applied sociology: Opportunities and problems.* New York: Free Press, 1965. (III; Process of research, Research-practitioner gap, Research-practitioner collaboration)

With social science research increasingly moving into clinical settings, the authors explore the problems which researchers and practitioners encounter in such circumstances, and attempt to determine whether some of the problems stem from the organizational structure of the professional agency. Findings include: to some extent, conflict between practitioner and researcher arises from a different orientation (human beings vs. statistics); evaluation by researcher can be perceived by practitioner as threatening; researcher and practitioner have totally different organizations of work and time; researcher tends to have official lines of communication with administration rather than with practitioners. Several formal ways of alleviating this nonproductive stress are reported, for example: using researcher-practitioner team approach. Although the emphasis is primarily on a relationship that exists in the process of research, this report has valid implications for the subsequent utilization of the research.

OPINIONS AND ATTITUDES DURING CHANGE

MODEL

Rogers, Carl R. The characteristics of a helping relationship. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 153–166. (II; Change agent; Client-practitioner relationship)

A helping relationship is defined as one in which at least one of the parties has the intent of promoting the growth, development, maturity, improved functioning, and improved coping with life of the other. Several studies are cited to show that the difference between the more effective methods of therapy and the less effective methods involves factors relating to the attitudes of the helper and the perception of the relationship by the "helpee." Based on these studies and his own clinical experience, the author discusses 10 principles of creating a helping relationship.

RESEARCH COMMUNICATION

BIBLIOGRAPHY

Rogers, Everett M. *Bibliography of research on the diffusion of innovations.* East Lansing, Mich.: College of Communication Arts, Department of Communication, Michigan State University, 1964. (I; Diffusing information)

The Diffusion Documents Center at Michigan State University has published this bibliography of 1,243 entries to promote awareness of diffusion research. The items in this bibliography fall into two categories: (1) diffusion research publications reporting empirical results; and (2) other diffusion research publications such as bibliographies, summaries of findings reported in other reports, and theoretical findings.

DIFFUSION OF INNOVATION

ANALYSIS

Rogers, Everett M. Communication of vocational rehabilitation innovations. *Communication, Dissemination and Utilization of Rehabilitation Research Information.* Washington, D.C.: Joint Liaison Committee of the Council of State Administrators of Vocational Rehabilitation and the Rehabilitation Counselor Educators, Department of Health, Education, and Welfare, 1967, Studies in Rehabilitation Counselor Training, No. 5. Pp. 19–32. (I, III; Information retrieval system, Communication links, Change agent, Promotion of communication)

In this paper the author concentrates on the problem of dissemination of innovation in the field of vocational rehabilitation. He reviews established principles of diffusion of innovations, identifies unique attributes of vocational rehabilitation setting which affect these theories, and draws some implications for action and future research. Diffusion is viewed as the *communication* of an *innovation* from some *source* to members of a *social system* over *time.* Significant recommendations for more effective dissemination include: establishing better communication links between source and potential users of innovations; determining relative effectiveness of certain demonstrations and demonstration methods as compared to others;

encouraging VR personnel to become better research consumers; developing an information retrieval system for relevant research results; and, bringing reseachers and administrators into the world of the counselor upon occasion, with view that research thus developed from a shared reality would more likely have relevance for potential users.

DIFFUSION
REVIEW

Rogers, Everett M. *Diffusion of innovations.* New York: Free Press, 1962. (I, III; Adoption process, Adopter, Change agent, Opinion leaders)

This review aims at synthesizing and evaluating available research findings and theories in an attempt to identify the common threads that run through all the research traditions on the subject of diffusion. More than five hundred publications on diffusion of innovations are reviewed, including eleven of the author's major research projects. The survey of literature is multidisciplinary in scope reviewing relevant material in anthropology, sociology, education, economics, industrial engineering, and public health. Rogers found that: (1) certain characteristics of the innovation, as perceived by members of a social system, affect its rate of adoption; (2) the adoption process consists of five stages—awareness, interest, evaluation, trial, adoption; (3) there are five classes of adopters based upon degree of innovativeness, ranging from venturesome to traditional; (4) generalizations regarding social structure within a system can be applied to adopter categories; (5) the influence of opinion leaders affects adoption of innovations; (6) different kinds of information are important to different adopter categories at different stages of the adoption process; (7) the role of change agent may significantly affect diffusion and adoption; and (8) guidelines can be defined to aid change agents.

DIFFUSION RESEARCH
CASE STUDY

Rogers, Everett M. How research can improve practice: A case study. *Theory into Practice,* 1962, 1 (2), 89–93. (III; Innovation adoption rate, Opinion leaders, Research utilization, Information dissemination)

General illustrations from diffusion research in rural sociology are used to show how the Extension Service has been improved. Examples are the discovery of the stages of adoption and the importance of personal or impersonal information sources at each stage; the scale for rate of adoption and how this knowledge is applied to diffusion campaigns by extension agents, and the use of opinion leaders to reach "laggards."

MODELS FOR CHANGE
THEORETICAL ANALYSIS

Rogers, Everett M. Toward a new model for educational change. Paper prepared for the Conference on Strategies for Educational Change, sponsored by Ohio State University, East Lansing, presented at the Department of Communications, Michigan State University, East Lansing, Mich., 1965. (II, IV; Educational innovation, Institutional change)

In this paper Rogers takes to task what he considers the exclusive concern with antecedents and correlates of educational innovativeness in the past study of educational change. A new model for educational change emphasizing the need to evaluate the consequences of innovation for teachers, learners, and communities, is then suggested. The paper points out the need to study change *within* schools and the nature of decision-making involved in adopting innovations at the school level which may involve forced rather than optional, contingent, or collective decisions. A paradigm for studying the discrepancy between the teacher's attitudes toward the innovation and the overt teacher behavior as demanded by the organization is also presented.

CHARACTERISTICS OF INNOVATORS
ANALYSIS

Rogers, Everett M. What are innovators like? In R. O. Carlson, et al., *Change processes in the public schools.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1965. Pp. 55–64. (II; Linking roles, Opinion leaders, Change agents, Process of social change)

Rogers enumerates characteristics of innovators (the first members of a social system to adopt new ideas) which are pertinent to the process of social change. In general, innovators are young and of relatively high social status in terms of amount of education, prestige ratings, and income. Impersonal and cosmopolite sources of information are important to them (they themselves are cosmopolite). They exert opinion leadership. They are likely to be viewed as deviants by their peers and by themselves. Significant findings about school change which have implications for administrators include: (1) a high relationship between financial resources of a school system and its innovativeness (disproven by Carlson); (2) social characteristics, social relationships, and communication behavior of individual staff members undoubtedly relate to the innovativeness of their school system; (3) conversely, the school system through its policies may affect the innovativeness of its teachers; (4) the absence of agents that promote change may be a factor in the relative slowness with which schools adopt innovations.

DIFFUSION OF INNOVATION
REVIEW/ANALYSIS

Rogers, E. M. with Shoemaker, F. F. *Communication of innovations: A cross-cultural approach.* New York: Free Press, 1970. (I, II; Adoption of innovation, Processes of innovation, Change agents, Planning for change, Organizational and institutional change)

More than 1,500 publications on diffusion of innovations are reviewed in order to relate empirical understandings about the diffusion of ideas to a theory of social change. Cross-cultural similarities and contrasts are treated in diffusion generalizations, which are used to facilitate understanding of the diffusion process by change agents and social scientists. The authors conclude that communication is essential for social change, which is defined as the process by which alteration occurs in the structure and function of a social system. Basic elements in the process of social change are invention, diffusion of the invented ideas, and consequences of diffusion (changes in the social system). Directed contact change, in which outsiders introduce new ideas in order to achieve predetermined goals, is said to be the most common contemporary type of social change. Middle range analysis, in which hypotheses relating concepts of social change are formulated and empirically tested, is advanced as a stepping stone to more general theories of social change. Diffusion, defined as a special type of communication concerned with the spreading of *new* ideas, is shown to depend on features of the innovation itself, the rate of adoption of the innovation, types of communication channels used in spreading the new idea, and the amount of time involved in the innovation-decision process. Three main types of innovation decisions are discussed: optional decisions, collective decisions, and authority decisions. Authoritative and participative approaches to organizational change are compared. Replacement discontinuance (rejection of an innovation in favor of a better idea) and disenchantment discontinuance (rejection because of unsatisfactory performance) are discussed. Features of the social structure in which diffusion occurs, such as norms and opinion leadership, are shown to importantly influence the spread of new ideas. Features of the change agent, the professional person who attempts to influence innovation decisions, are also outlined. The history and present shortcomings of research on the diffusion process are presented. Finally, the consequences of changes in a social system are outlined and analyzed. The authors conclude that further research is needed on the attributes of innovations; in particular, study of the dimensions of perceived attributes and of innovation bundles rather than single innovations is suggested.

PROCESS OF CHANGE

SYNTHESIS

Rogers, E. M., & Svenning, L. *Managing change.* Washington, D.C.: Operation PEP (A State-wide Project to Prepare Educational Planners for California), U.S. Office of Education, Department of Health, Education, and Welfare, September 1969. (I, IV, III; Communication, Adopters, Change agent, Strategies for effecting change, Communication channel and receiver)

Presented in readable handbook style, this pamphlet provides the reader with: a general understanding of change, communication and diffusion processes; a series of principles and strategies that can be used in planning and implementing change; and a set of guidelines and strategies for managing unique change situations that may face him. A set of communication principles is set forth in terms of the significant variables: source, channel, message, receiver, situation. Diffusion principles are offered focused on: innovation, adopters, communication channels, social systems, and change agents. Steps one can take in managing the change process are analyzed: define objectives, investigate alternative innovations; define, distinguish and analyze the target, decision, and adoption audiences; define steps that must be taken with each of these audiences to reach a decision, secure adoption and achieve objectives of change; select and employ those communication and diffusion principles most relevant to the specific change situation and develop change strategies to achieve previously defined objectives; plan to integrate innovation in the on-going system; evaluate the effects of the change; and diffuse your findings.

RESPONSE TO INNOVATION

EMPIRICAL STUDY

Rose, M., & Esser, M. A. The impact of recent research developments on private practice. *American Journal of Psychiatry,* November 1960, 117, 429–433. (II; Research-practitioner collaboration, Research diffusion)

The authors' purpose is to study actual therapeutic methods used by psychiatrists in treatment of various common mental disorders to obtain information about the *theoretical convictions of psychiatrists and the way these convictions influence actual treatment methods.* Of relevance to research utilization is the finding in this study that the psychiatrists relied heavily on pharmacological methods even though they recognized that this practice was often in direct conflict with their theoretical framework. It is suggested that when results of an innovation are clearly visible, as in the case of drug therapy, the fact that it may conflict with professional values and attitudes (as prescribed by one's theoretical orientation) does not represent a major barrier to acceptance of the innovation. Although the psychiatrists were primarily psychologically oriented, they judged physical and pharmacological methods useful, and actually relied quite heavily upon them in daily practice.

BARRIERS TO COMMUNICATION

ANALYSIS

Rosen, George. Some substantive limiting conditions in communication between health officers and medical practitioners. *American Journal of Public Health,* December 1961, 51, 1805–1816. (III; Resistance to change, Knowledge utilization, Public health officer-physician relationship)

The barrier between physicians and public health officers is not merely a matter of poor communications. Rather, it involves social, ethical, economic and political factors, as well as value, status and power relationships. Physicians have traditionally seen their role as person-to-person. This is one reason that they have had difficulty in perceiving and ministering to the needs of the community, and the larger society. Other factors, reaching great complexity, are also involved. For example, the reporting of contagious and venereal disease was long contested on the grounds that it was a breach of medical ethics in the confidential patient-physician relationship. Visits by public health inspectors to quarantined areas as a check that the regulations were being enforced was seen as a breach of social etiquette—the doctor in charge should always be consulted first. Apart from these problems, the fact that doctors carry a long established place in the community and are viewed with great respect makes encroachments by public health officers particularly difficult, in that doctors can use their high positions as weapons against the health officers. The author concludes that until all these factors are taken into account as affecting communications there can be little progress made in improving those communications.

PROMOTION OF UTILIZATION

EMPIRICAL STUDY/ RECOMMENDATIONS

Rosen, Marvin. Rehabilitation, research and follow-up within the institutional setting. *Mental Retardation,* 1967, 5, 7–11. (I, IV; Mental hospital innovation, Evaluation of innovation)

This article tries to develop research guidelines for studying the rehabilitation of mentally retarded persons based on observations of students (before and after leaving the institution) of a comprehensive program at the Elwyn Institute that provides a gradual transition between the institution and the community. "Rehabilitation" has three referents: the procedure used, the change in "state" within an individual being rehabilitated, and the observable effects or outcome of rehabilitation. Procedures involve both the physical and social setting of the student, and the specific training he is given. Behavior in terms of roles accepted by an individual and expected by others is hard to modify in institutions which encourage isolation and control. The retarded must learn to feel more competent. Situational variables affecting adaptive and coping behavior must be studied. Training programs should be based on the absolute minimum amount of practical information and skill a retarded individual must possess to survive. Normative information is needed for important skills in retarded adults. Crucial, modifiable skills should be taught. Occupational variables affected by training and by motivation should be separated, and minimal standards must be set for initial and sustained employment in various occupations. Rehabilitation implies a change of "state" in the individual which is seldom demonstrated. Rehabilitation may be simply a change in location accompanied by greater freedom of movement and choice behavior. Raised self-esteem and self expectancy could result from successful rehabilitation experience. Both students and the Rehabilitation Department associate "being a good worker" with chances for later success. Training outcome studies are either predictive, evaluative, or descriptive. Since behavioral norms for retarded persons discharged from institutions are not yet available, predictive and evaluative studies seem pointless. Simple head counts of persons employed, wages earned, and types of jobs provide enough information about the success of training programs. Results of such studies should be fed back to training and education programs, even if implementation entails a drastic change in an institution's physical and social structure.

RESEARCH PRACTITIONER GAP
THEORETICAL ANALYSIS

Rosenbaum, M. Obstacles to research in psychotherapy. *Psychoanalytic Review*, 1960, 47 (1), 97–105. (III; Barriers to utilization, Research-practitioner collaboration, Resistance to change, Research in group psychotherapy)

A study by the Veteran's Administration indicates there is very little research being done in the field of group psychotherapy. The author suggests probable reasons for such a paucity of research. Practitioners desire to perfect their techniques rather than engage in research; therapists often resent research, feeling that it may "contaminate" their therapy. Ethics involving patient-therapist relations may be pertinent to an avoidance of research. Furthermore, therapists are often not fully familiarized with a research project or are not interested in cooperating. A therapist himself may avoid research if he perceives it as threatening. Also, status needs must be considered. The therapist may feel that the research is only benefiting the researcher and is providing no benefits for him or his patient. Some therapists work intuitively and reject the concept of a science of clinical insight. An extremely difficult problem may be common agreement on concepts even on the semantic level. Not to be minimized are the laymen providing backing for clinics or hospitals who see value only in research that is immediately useful. The author concludes by suggesting that the researcher be aware whether his research is designed to influence a specific audience or to gain knowledge.

PROMOTION OF UTILIZATION
SURVEY

Rosenblatt, Aaron. The practitioner's use and evaluation of research. *Social Work*, 1968, 13, 53–59. (I, III; Research use, Interpersonal discussion)

How social workers rate usefulness of research and extent to which they use research findings in clinical practice is focus of this study with 308 case workers. Findings indicate in this analysis that interpersonal discussion might be most effective way of transferring research information to practitioners. Interpersonal discussions with supervisors or consultants could not only make practitioners aware of relevant findings, but provide support for research utilization that written reports could never offer. Lack of time seems to be one reason that research is not utilized. Half of respondents in study ranked their research courses as least helpful in current practice. Generally, research ranked least used and least useful of the activities compared in this study; and the author suggests the indication of a negative bias concerning research on the part of social workers.

RESEARCH-PRACTICE INTERACTION
CASE ANALYSIS

Rosenfeld, J. M., & Orlinsky, N. The effects of research on practice: Research and decrease in noncontinuance. *Archives of General Psychiatry*, 1961, 5, 176–182. (III; Research-practitioner collaboration, Strategies for effecting institutional change, Attitudes and characteristics of persons in change)

The authors describe changes in a service agency's functioning that occurred concurrently with a research program focused on these functions. The general research program dealt with personality factors associated with patient resistance to accepting recommended psychiatric treatment (focused on differences between patient and therapist perceptions of a therapeutic process and the effect of these differences on continuance or noncontinuance of treatment). The whole staff of the psychiatric outpatient clinic participated in the project, planning, revising data forms, predicting premature therapy termination from tape recordings of early therapy interviews. The possibility that the research program and the functioning of the service might be affecting each other in significant ways was brought to the attention of the authors when discontinuance decreased to such an extent that it could no longer be used as a criterion measure. It is suggested that a substantial portion of change can be attributed to improvement of social workers' services and techniques, since caseload and clinic population did not change during the study. Evidently, the focus of the research and staff participation increased attention on the factors being studied, leading to behavior changes in the staff.

PLANNED CHANGE
ANALYSIS AND SUGGESTIONS

Rubin, Louis J. Installing an innovation. In R. R. Goulet (Ed.), *Educational change: The reality and the promise.* New York: Citation Press, 1968. Pp. 154–165. (IV; Innovation, Innovation installation)

Innovations often enjoy fad status. The spotlight is therefore focused only on a small number of related innovations rather than on the many and diverse innovations being put forth in different areas. Change and innovation must be ordered by informed judgment, by the fruits of sound reasoning, and by a clear sense of the way things are. The author proposes in this article a system for installing innovations in ongoing organizations. Several weak spots in the current art/science of innovation installation are described: innovations that can make authentic difference tend to require personnel training, a phenomenon about which too little is known; invention of innovations does not always parallel needs of the system; little is known about degree and kind of preparation that should precede the introduction of an innovation. The change process consists of four phases: research, development, dissemination and installation. Effective installation involves three sequential phases: preliminary analysis, strategy selection, and action. Rubin's process for installation of innovations reflects the classic medical model (study-diagnosis-treatment).

CHARACTERISTICS OF PERSONS IN CHANGE
CASE STUDY ANALYSIS

Ruff, G. E., & Levy, E. Z. Psychiatric research in space medicine. *American Journal of Psychiatry,* 1959, 115, 793–797. (II; Opinions and attitudes during change)

Tests were done to determine a space flight environment that would meet the needs of the crew. Two types of experiments were conducted. In a study of prolonged confinement, findings included the appearance of regressive behavior, few suggestions of ego impairment, and conflict handling by the subject's usual defenses. In experiments dealing with isolation, subjects reacted by structuring their experiences in some meaningful fashion. It was determined that the space crew member should have a strong ego, and his environment should be meaningful and varied.

COMMUNICATION
ANALYSIS

Runkel, Philip J. Replicated tests of the attraction-communication hypothesis in a setting of technical information flow. *American Sociological Review,* June 1962, 27, 402–408. (I; Interpersonal barriers, Information dissemination, Information utilization)

This study is based on the hypothesis that communication and attraction tend to go together. The corollary hypothesis tested here is that degree of respect between individuals is associated with relevant communication, and that "among densely connected groups of persons the general level of respect will be higher than among loosely connected or unconnected groups." This study is concerned with the relation between frequency of communication within secondary school faculties concerning the testing and counseling of students, and respect for the judgment of the communicant concerning these matters. The faculties of 28 secondary schools were given measures of respect for other faculty members, and level of communication among them. The relationship between communication and respect was moderately strong in some schools, weak in others.

DIFFUSION
SURVEY

Ryan, B., & Gross, N. C. The diffusion of hybrid seed corn in two Iowa communities. *Rural sociology,* 1943, 8, 15–24. (I, III; Diffusion pattern, Adoption process)

This early study was designed to trace the diffusion pattern of an innovation (hybrid seed corn) among farmers. The differentiation of the informational and persuasive functions in the adoption process is a significant contribution of this survey of 323 farmers in two rural town areas in Iowa. The mass media, or the professional agent is useful for creating knowledge and awareness, while colleagues and credible individuals (neighbors) are most useful in persuading individuals.

ORGANIZATIONAL CHANGE AND INNOVATION
SURVEY

Sapolsky, Harvey M. Organizational structure and innovation. *Journal of Business,* 1967, 40, 594–610. (I, IV; Resistance factor, Diversity and innovation)

This investigation was directed toward differentiating between organizational and individual innovation. Sapolsky examines the innovation experience of nine more innovative department stores in East and Midwest. It is hypothesized that the greater the diversity of the organization, the greater the probability that members will conceive and propose major innovations. A parallel hypothesis is: the greater the diversity of the organization, the smaller the proportion of major innovations that will be adopted. A general pattern of presentation, experimentation, and frustration related to structural change could be discerned. The decentralized structure of the department store is viewed as a major barrier to the institution of change. The author concludes that the diffusion of innovation becomes difficult, expensive and sometimes impossible in firms composed of a large number of equals who demand equal treatment.

PLANNING FOR CHANGE
THEORETICAL ANALYSIS

Sarason, Seymour B. Towards a psychology of change and innovation. *American Psychologist,* 1967, 22 (3), 227–233. (IV, II, III; Resistance to change, Models for change)

(1) As psychological theorists move in the direction of stating comprehensive formulations about determinants of human behavior, they will become increasingly concerned with the nature of social organizations, and ways in which they change. Theoreticians must formulate generalizations which do justice to the complexities involved. A recent attempt by the author and his colleagues to study a certain social system emphasized the need for a conceptual framework, however tentative, that would serve as a basis for thought, plans, and action. (2) A Psycho-Educational Clinic at Yale was started to serve as part of the clinical training program with two main purposes: to describe and understand the educational setting as a social system, which requires the erasing of arbitrary distinctions and the reflection of actual relationships; and to study change introduced from within and without the school. More is known about externally introduced change than internal change, which implies that researchers assume schools to be static and not particularly complicated—an assumption the author experiences as naive. (3) Implemented changes quickly lose their innovative intent. One reason is that change proposals tend to emanate from on high without accounting for the feelings and opinions of teachers who must implement changes. Any theory purporting to explain behavior must account for man-system relationships. (4) Advice-givers (change agents, etc.) are part of man-system relationships. If the advice-giver is outside the system of the advice-seeker, he tends to react to an unfamiliar problem in a way that changes the problem or discourages the advice-seeker. How the proposal changed at each hurdle affects its ultimate success or failure. Pre-implementation events frequently insure that changes will occur in a way that precludes innovation. Words are among the largest obstacles to innovation. The author offers an example, hypothesizing that if the parent organization of the two programs had sought professional advice, it would have had its problem rephrased into familiar terms and been advised to establish a totally different type of program—a much less innovative, effective one. (5) Psychologists are often change agents. The author thinks they are probably similar to unsophisticated individuals and "as good as anybody else" at insuring that innovation does not follow change. Psychologists need to develop theories of change and innovation, and not just on the molecular level.

COMMUNICATION

THEORETICAL ANALYSIS

Scheflen, Albert E. Human communication: Behavioral programs and their integration in interaction. *Behavioral Science,* 1968, 13 (1), 44–55. (IV; Characteristics of persons in change)

In this paper the author discusses human behavior patterns in group situations. Behavior is extremely complex in such situations but repetitive patterns will eventually emerge with enough study. The author hypothesizes that all interactions and modalities of behavior appear to be programmed when they are examined as small units. Although the concept of stereotyped behavior goes against our cultural value of human individuality, without patterned interaction human relations would be unpredictable and unreliable. Communication depends upon shared meaning through use of a common coding system. The author feels that communication theory should be explicitly taught to workers in the applied behavioral sciences and thus will be taken into account when plans are made for hospitals, public housing, conferences, etc. Possible areas of miscommunication and deviancy will be known more precisely when one can determine which programs will be inappropriate in certain contexts and which roles will be inappropriate.

MODELS FOR CHANGE

THEORETICAL ANALYSIS

Schein, Edgar H. The mechanisms of change. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 98–107.

(II; Change agents, Strategies for effecting change, Resistance to change, Process of change, Opinions and attitudes during change)

A conceptual scheme of change is presented which encompasses the kinds of changes in beliefs, attitudes and values that are regarded as "deep" and "central" changes involving the person's self or identity. *Unfreezing, changing* and *refreezing* are the three stages in the change process which involve motivation to change, new responses based on new information, and integration of the changes, respectively. Each of these is discussed in terms of the mechanisms involved. *Unfreezing* occurs through mechanisms of lack of confirmation or disconfirmation; induction of guilt anxiety; and creation of psychological safety by reduction of threat or removal of barriers. *Changing* occurs through cognitive redefinition based on information acquired by *identification,* where the learner focuses on a single model, or *scanning* which has a multiple model focus. Two types of identification, positive and defensive, are analyzed in terms of conditions needed, psychological processes involved, and outcomes. Relative merits of scanning, positive identification and defensive identification are discussed in terms of desired outcomes. Personal growth is fostered by scanning or positive identification. Positive identification is also the optimum approach for the acceptance of a particular set of behaviors and attitudes. Defensive identification is next best; and scanning least likely to succeed for this goal.

UTILIZING INFORMATION/KNOWLEDGE
ANALYSIS AND SUGGESTIONS

Schmuck, Richard. Social psychological factors in knowledge utilization. In T. L. Eidell & J. M. Kitchel (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968. Pp. 143–173. (I; Facilitating utilization, Promotion of utilization, Barriers to utilization)

Theoretical analysis of problems of knowledge utilization in education and suggested action programs facilitating research utilization is focus of this article. Social relationships between behavioral science researchers and administrators are characterized by hostility and resistance which impedes utilization. Four detrimental psychological processes are identified: mutual misperceptions of other's behavior; distortions of memory; placing of low value on each other's work; and possibilities of collaboration may seriously threaten the self-concepts of both. For administrators, internal psychological linkages between knowledge and practice are made difficult by: role expectations others hold for him, his own division between the role of administrator and role of learner, lack of clear operational goals, lack of motivation to try something new, and presentations of research knowledge in strictly verbal ways and in moderately threatening surroundings. Ten social psychological assumptions which must be considered in planning action to facilitate research utilization include: trust, openness and attraction between administrator and behavioral scientist; public discussion of inhibiting forces and how they might be overcome; cooperation activity structured so that each will benefit. Ten stages implicit in design of a training program for development of an individual administrator, and an eight stage plan for modifying faculty's expectations and pressures that support the status quo implement the author's goal toward shaping a climate more receptive to research utilization.

PROMOTION OF UTILIZATION
SUGGESTIONS

Schoenfeld, Clarence A. Communicating research findings. *Journal of Educational Research,* 1965, 59 (1), 13–16. (III; Medium selection, Report writing, Research reporting, Communicating research)

Based on the author's broad experience and observations, this article offers some suggestions and guidelines for upgrading the quality of the written research report. The hope is that better lines of communication between researcher and user can be established to enhance utilization possibilities. The researcher must consider the relevance of content to the larger field of inquiry or practice. The subject should be reduceable to one paragraph. The audience for whom the information is relevant should be carefully defined; and in accordance with this audience analysis, the medium or occasion carefully selected for the appearance of the article. A very general "how to" article of primary interest to the researcher, the author's findings reflect his feeling that the poor quality of written research reports is a primary factor in the communication breakdown between researcher and user.

COMMUNICATION RESEARCH ANALYSIS

Schramm, Wilbur. Communication research in the United States. In W. Schramm (Ed.), *The science of communication.* New York: Basic Books, 1963. Pp. 1–16. (III; Resistance to change, Utilizing information, Communication dissemination)

Early leaders of communication research traditions in the United States are generally thought to be Paul Lazarsfeld, Carl Hovland, Kurt Lewin and Harold Lasswell. Currently, communication research tends to combine the methods and interests of four traditions, has become more quantitative, and deals with all of the ways information and ideas are exchanged. In the most simple form, this process necessitates a sender, a message and a receiver, although at times the sender and the receiver may be the same person. The message itself may have different kinds of meaning: (1) denotative (the common or dictionary meaning) and connotative (the emotional or evaluative meaning); (2) surface and latent meanings, varying according to the relationship of the senders and receivers; (3) parallel messages involved in sight, variations in sound, emphasis, etc. Also affecting the message is the knowledge of the receiver about the sender. Once the message is transmitted it must be: (1) selected from competing messages, (2) interpreted in terms of the receiver's frame of reference and (3) accepted or rejected. This third step involves the relationship of the message to the receiver's values and beliefs and the norms and beliefs of his reference group. A conflicting message will probably be rejected or possibly distorted to become compatible. A well-made communication from a trusted source, arriving in a new area or topic for which there are no strong defenses is likely to be accepted and to accomplish change. Communication research is also concerned with feedback. The presence of feedback in face-to-face situations facilitates explanation and acceptance of messages by receiver. Mass media communication, however, offers no opportunity for feedback.

EVALUATION OF INNOVATION RECOMMENDATIONS

Schulberg, H. C., et al. Program evaluation models and the implementation of research findings. *American Journal of Public Health,* 1968, 58, 1248–1254. (III, I; Barriers to utilization, Rejection of innovation)

For a program evaluation to be successful the purposes for the evaluation should be determined; they can effect both the utilization of the findings and the depth of the investigation. There are two research models used in program evaluation. The *goal-attainment model* determines the success in attaining a stated goal. Two reasons why the findings of this approach are often not implemented are: the stated goals are not the real goals, and interrelated goals exist. The *system model* of evaluation overcomes these problems by studying a social unit which is capable of achieving a goal. The system model tries to determine the most effective means for achieving the goals under a given set of conditions. Part of the system under study with this model is the feedback mechanism within the organization, thus the factors which may determine the effectiveness of the integration of the studies' findings can be discovered.

PROMOTION OF UTILIZATION
THEORETICAL ANALYSIS

Schwartz, David C. On the growing popularization of social science: The expanding publics and problems of social science utilization. *American Behavioral Scientist,* 1966, 9 (10), 47–50. (I; Social science utilization, Knowledge linker, Knowledge gap)

Effective utilization of social science research will increase when more efforts are made to generalize the findings to more and broader publics, and when researchers improve attempts to communicate with a variety of audiences, simultaneously at several different levels of sophistication. Three publics for research findings are defined: (a) the scientific community, (b) social action professionals and volunteers, such as social workers, public health officials, etc., and (c) students. The article draws attention to the "sins of omission" resulting from communication gaps between researcher and user; relevant information does not get to audiences that could make use of it. "Sins of commission" are those resulting from errors of fact and/or misinterpretation, leading to program failures and negative backwash. Effective utilization of research depends not only on the quantity of communication of findings, but also on the accuracy or quality of these communications. This article lends support to the importance of establishing a linkage role between researcher and practitioner.

MENTAL HOSPITAL INNOVATION
RECOMMENDATIONS

Schwartz, M. S., & Schwartz, C. G. Considerations in determining a model for the mental hospital. *American Journal of Psychiatry,* 1959, 116, 435–437. (III, II; Planning for innovation, Process of change)

There is a lack of analysis of some basic factors in developing models for the care of mental inpatients. Three of these considerations are the practical and desirable goals of the institution, the theoretical orientation toward mental illness and its treatment, and the purposes and interests practitioners desire the institution to pursue. If these factors are considered the result should be an institution that would better serve the welfare of the patient.

INFORMATION RETRIEVAL
READINGS/REVIEW

Sharp, H. (Ed.) *Readings in informational retrieval.* New York: Scarecrow Press, 1965. (I; Information retrieval of the future, Basic information sources, Economics of information retrieval)

This volume provides a section of articles from the field of information retrieval grouped in the following categories: (1) The need for information; (2) Basic information sources; (3) Government sources of technical information; (4) Hand-operated deep-indexing systems; (5) Indexing information for retrieval; (6) Information retrieval machines: How they work; (7) Abstracting and translating by machine; (8) The economics of information retrieval; (9) Some case studies in computerized information retrieval; (10) Information retrieval of the future. Selected articles are abstracted and coded separately. For example, 47 articles are directed toward broad coverage of information retrieval.

PROMOTION OF UTILIZATION
CASE STUDY ANALYSIS

Shartle, Carroll L. The occupational research program: An example of research utilization. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science,* Vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 59–72. (I; Change agent role, Strategies for effecting change)

The ideas of this paper are based on the author's broad experience and observations during the 20-year operation of the Occupational Research Program. The author describes the program as an example of research utilization, and then explores some of the major factors related to utilization. Strategies for facilitating and securing use of research findings include dual responsibilities of the researcher (for both development and application); institutionalizing the change agent role; including lay personnel in planning research program (who later facilitate utilization in the operational context); formal in-service training to implement research findings; requiring use (require and give credit for use). Finally, it is emphasized that format and content of research product must be appropriate in that findings must be available in usable form, otherwise application and utilization will be limited.

PROCESS OF CHANGE
SUGGESTIONS

Shepard, H. A., & Blake, R. B. Changing behavior through cognitive change. *Human Organization,* Summer 1962, 21, 88–96. (IV; Use of groups for change, Model for change, Organizational change, Problem-solving change)

The authors distinguish between mechanical systems and organic systems. This distinction is based on the different kinds of focus that problem-solving takes in each system. The mechanical system acts to repress trouble by new rules or better enforcement while the organic system uses mutual confidence, trust and understanding rather than authority-obedience to resolve difficulties. To bring about an organic approach to problem-solving, the political orientation of a mechanical system must be changed. Here focus is not on the problems themselves but on self-gain through "games" of politics. A win-lose, all-or-nothing defensiveness results. If this orientation is changed to an "everyone can win" view, relationships will be improved through greater trust and mutual respect. This result can be achieved through retreats where organizational subgroups leave the job setting for a week and work in a sort of T-group situation. Upon return these individuals can try to diagnose the difficulties of their organization and attempt to implement solutions to these problems. Since these changes are arrived at by the group, resistance is far less likely to occur. Problems must be looked at on the level of individual adjustment, group difficulties, and intergroup difficulties. The ideal result is an adaptive, organic system "that can mobilize its resources to create and test novel approaches to old problems and new challenges."

STRATEGIES FOR EFFECTING CHANGE
ANALYSIS

Sieber, Sam D. Organizational influences on innovation roles. In T. L. Eidell & J. M. Kitchell (Eds.), *Knowledge production and utilization in educational administration.* Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, 1968. Pp. 120–142. (IV; Educational change, Organizational change, Status-occupant strategy of change)

Based on knowledge and insight of the author in his role as Project Director, Bureau of Applied Social Research, Columbia University, four features of our public education system are identified which distinguish education from medical practice, industry, and agriculture. Affecting the applicability of diffusion research in these fields to education, four distinguishing features of educational structures are: vulnerability to the social environment (adoption of innovation often depends more upon political feasibility than educational value); the professional self-image and associated values of educational personnel; the diffuseness of educational goals; and the need for coordination and control of the primary clientele as well as of the employees of the system. The implications of these features for diffusion and innovation are discussed and suggestions made for strategies of change. Three classical strategies for inducing educational change are identified and analyzed: the Rational Man strategy (one-way communication); the Cooperator strategy; and the Powerless Participant strategy. Needed is a status-occupant strategy of change which takes into account the distinctive characteristics of educational structures, and the conditions under which practitioners will respond to the tactics applied in each of the three traditional strategies. The image of practitioners as status-occupant assumes that "they are imbedded in an intricate network of role relationships that holds its shape as a consequence of shared values, shared solutions to status problems, and shared sanctions for deviance and conformity." Reorganization appears necessary at both the local and national levels.

GATHERING INFORMATION/ KNOWLEDGE

PROGRESS REPORT

Siegmann, P. J., & Griffith, B. C. The changing role of psychological abstracts in scientific communication. *American Psychologist*, 1966, 21 (11), 1037–1043. (III; Selecting information/knowledge, Classifying information/knowledge)

A revised program of operations for *Psychological Abstracts* (PA), which utilizes its strategic position in the disssemination network of psychology to survey the literature fully and provide increased user services, is described. The earlier operation of *PA* and the present system are contrasted. Under the new system, all information is computer-processed and is separated into two categories: "core" literature is abstracted and processed immediately, so as to minimize time lag between publication of the material and appearance of its corresponding abstract; "peripheral" literature is not reviewed immediately, but is recorded and stored for later review and use. The new system also provides for more flexible, more easily retrievable information concerning information sources to be processed. In particular, the ability of the new system to survey the literature fully in various ways will allow the resources of *PA* to be employed in national plans for scientific information dissemination in psychology. The new system ensures the identifiability of the principle sources of research, both in terms of scientists and institutions, and allows a continuing series of studies on dissemination within the field. Computer printing allows repeated reproduction of abstracts in a variety of formats, and machine tabulation for more complex literature and production control. Finally, efforts to increase available information in peripheral literature areas will provide psychologists with expanded and useful coverage of wider areas of scientific endeavor.

DISSEMINATION

DEMONSTRATION STUDY

Smith, R. L., Hawkenshire, F., Lippitt, R. O. *Work orientations of teenagers.* Ann Arbor, Mich.: Institute for Social Research, University of Michigan, 1969. (Report for Contract No. OE

5-85-067 for Project No. 5-0118.) (I; Barriers to utilization, Resistance to change, Utilization process)

Undertaken to test a variety of dissemination activities, this study attempts to sharpen an appreciation of the critical issues involved in the utilization process—particularly as they relate to the findings of social research. The study was carried out in a school setting, using data from approximately 1,200 teenagers who had been interviewed regarding their attitudes, thoughts, feelings and activities about work and play. These findings were disseminated to high school faculties through three dissemination projects: (1) an hour-long faculty meeting, (2) a 4-hour retreat-type workshop, and (3) an 8-hour session divided into two parts. The question addressed at the dissemination project meetings (over a time period of several weeks) was how they could change what the marginal student thinks, feels and does about learning. Major resistances to knowledge utilization are identified as psychological (fear of the new, reflections on one's competence), sociological (challenge to status within system), ecological (shortage of manpower, space, resources), economic (costs of retooling for innovation), political (changes of balance of power within system). Dissemination activities are evaluated along the following dimensions: content, participants, format, and implementation of objectives. A suggestion is that the appropriate unit for dissemination should be the fully developed program rather than the basic findings and their implications.

RESISTANCE TO CHANGE
CASE STUDY

Spicer, Edward H. (Ed.) *Human problems in technological change: A casebook.* New York: Russell Sage Foundation, 1952. (I; Cross-cultural change, Cultural linkage, Cultural bias, Buffer organization)

Resistance is not necessarily a condition of change. Once resistance is seen as a symptom of special conditions rather than as a constant element, it becomes possible to discover causes of success and failure of change efforts through the study of cases in which resistance appears. Through the use of successful and unsuccessful case examples, this book seeks to demonstrate the factors related to the success and failure of cross-cultural change efforts. Case study analysis reveals these generalizations: people resist changes which threaten basic security; they resist proposed changes they do not understand; and they resist being forced to change. Guidelines for the study and analysis of the effects of technological innovation are included. Recurrent groups of problems are identified for use in diagnosing or analyzing situations, and as a basis for developing principles for solving human problems (problems of cultural linkage, of social structure, of the role of the innovator, of cultural bias, etc.). A master checklist which might be used for gathering information on proposed change in a wide variety of situations is given, and would appear to be of value to both administrators and consultants.

RESISTANCE TO CHANGE
ANALYSIS

Stewart, Michael. Resistance to technological change in industry. *Human Organization,* 1957, 16 (3), 36-39. (II; Interpersonal barriers to change, Institutional barriers to change, Technological change in industry)

There seem to be two schools of thought concerning reasons for resistance to technological change: (1) Resistance to change is not directed towards change itself, rather towards the way it is introduced. Thus, participation by those affected by it would overcome their resistance; (2) Resistance to change is caused by the implications that such changes would have for the social and psychological systems of the people undergoing change. Neither of these two really gets to the core of the problem, namely: in what way have the individuals come to be used to a certain kind of treatment, to a certain socio-psychological outlook, and to adopt a certain set of values? The author suggests that the very nature of the content in which a technological change is introduced should be carefully studied. In other words, the very background, pattern of work, nature of products, etc., of an organization are important variables which scholars have either neglected, or have not given their due share of consideration.

RESEARCH-PRACTITIONER GAP
THEORETICAL ANALYSIS

Strupp, H. H. Some comments on the future of research in psychotherapy. *Behavioral Science*, 1960, 5, 60–71. (III; Research-practitioner collaboration, Barriers to utilization)

The author thinks that research has not had much influence on psychotherapy although much controlled experimentation has occurred in the past fifteen years. Two major groups contribute to knowledge about psychotherapy: a) analysts and b) research workers (primarily clinical psychologists); but there is usually a cleavage between the two groups. Research by analysts is often not rigorous enough and research by psychologists often does not illuminate that which it is attempting to clarify. Analysts may feel that general experimental findings will be of no benefit to them since they deal with one individual at a time. Experimenters feel that psychotherapy is still a rudimentary science with a great need for controlled studies. Recent trends in psychotherapy such as taking the personality of the therapist into consideration and de-emphasizing technique are making research more difficult since subjective experience is difficult to measure or quantify. The author feels that it may not be possible to reconcile "successfully scientific rigor with the richness and subtle complexity of interpersonal dynamics."

DISSEMINATION
COMMUNICATION
ANALYSIS

Swanson, Don R. On improving communications among scientists. *Bulletin of the Atomic Scientists*, 1966, 22 (2), 8–12. (I; Selective communication systems, Informal information exchange, Linkage, Dissemination targets)

The author urges that informal information practices be aided and amplified, first by identifying the information-exchanging groups and improving and expanding the selective communication systems within these groups, with a high level of feedback to check on the value of the information disseminated. These processes of dissemination and feedback could be instrumental in the tasks of summary and synthesis for the consumption of other groups and broader audiences and, in the task of identifying overlapping groups and other potentially interested groups as distribution targets. "Mechanization itself can be considered an answer (to the information explosion) only if one doesn't understand the question." Possibly as much as 85 percent of useful scientific information is exchanged informally and verbally before the usual bibliographic tools are consulted to ascertain whether or not published information is available. A future information system should seek out its customers. Its activity must be directed, purposeful, and have continuous feedback of the consequences of its own actions.

KNOWLEDGE SELECTING

REVIEW

Swets, J. A. Information retrieval systems. *Science*, 1963, 141, 245–250. (I; Retrieval effectiveness, Retrieval efficiency, Retrieval technology, Knowledge gathering)

The author reviews 10 different measures for evaluating the performance of information retrieval systems and proposes another. Eight of the measures evaluate only the effectiveness (accuracy, sensitivity, discrimination) of a retrieval system while the other three assess efficiency as well by including such performance factors as time, convenience, operating costs, and product form. "The measure proposed here is one supplied by statistical decision theory. It compresses the four frequencies of the contingency table into a single number, and it has the advantage that this single number is sufficient to generate a curve showing all of the different balances among the four frequencies that characterize a given level of accuracy. . . . This measurement technique has the drawback, at present, that the model on which it is based has not been validated in the information-retrieval setting."

ORGANIZATIONAL CHANGE

HISTORICAL

Task Force on Indian Affairs. Implementing change through government. *Human Organization*, 1962, 21, 125–136. (IV; Organizational change, Opinions and attitudinal change, Values and change)

The tragic problems of the American Indian, the role of the United States government in creating the problems and the ineptness of the government in dealing with these problems are considered in this article. It becomes apparent that two major factors have prevented successful handling of the problems of the American Indian. First, is the value question, the problem of goals; the American people and many Bureau of Indian Affairs (BIA) employees have not understood the unique position of the American Indian in our society and have been unwilling to accept the Indian's refusal to become "like us." As a result, the policy of the Bureau has for years been directed at moving the Indian into American society; Indians have never been consulted or listened to in regard to their own wishes for policy and programs. With this basic and seemingly immutable value stand, the BIA has never been able to successfully adapt its programs to the realities of the situation. Thus, the second major problem has been the refusal to consider alternatives not consistent with the value stance. As a result, information coming from anthropologists, and pleas coming from increasingly articulate Indian leaders have not been transformed into administrative action. Solon T. Kimball illustrates this point with an incident drawn from his experience with the BIA in 1944. A report on Navaho schooling with policy recommendations written by several eminent anthropologists was supported by the BIA Commissioner, John Collier, but was sabotaged and buried by BIA personnel from the reservation in question. Apparently, the most liberal top administrators have little effect on organizational goals when the values of those who apply the policies run with the paternalistic, assimilative orientation of most Americans.

PLANNING FOR CHANGE

ANALYSIS

Taylor, Carl C. Social science and social action in agriculture. *Social Forces*, 1941, 20 (2), 154–159. (III; Change agents, Process of change, Social action in agriculture, Organizational change, Linking agents)

With the reorganization of the Department of Agriculture in 1958, the sociologists formerly with the Bureau of Agricultural Economics were given great, sudden responsibility for planning. Unable to do all the research necessary for such projects as the Columbia Dam resettlement, they enlisted the help of many local "folks" to do research on their communities. Their physical and in some cases sociological descriptions are asserted by the author to be as reliable as any observer because they know their own areas best. (They receive guidance from the Department of Agriculture.) With data from this work and with his basic sociological training, the rural sociologist must help the administrators plan communities. Although he may feel that the research is inadequate for the task, the resettlement will go on no matter what he does, so he must try to do the best he can with this tremendous natural laboratory. Advising the government is hectic and demanding, but the government is sponsoring more research than the universities.

MODEL FOR CHANGE
ANALYSIS

Taylor, James B. Introducing social innovation. Paper presented at meeting of American Psychological Association, San Francisco, Calif., September, 1968. (II; Interdisciplinary research, Applied research, Social innovation)

Drawing from his experience of a project in Topeka which proposed to develop more effective psychological rehabilitation procedures for low income people (5-year VRA grant), the author undertakes to identify troublesome issues typical of interdisciplinary research. This project required extensive community involvement, and was sufficiently successful so that when funding terminated, services were continued under local funding. Findings and suggestions are fresh and lively: interdisciplinary research is hampered by problems of interdisciplinary cooperation (insular emphasis of professional identity makes professional person ill-adapted to cooperative research); applied research must be developed in terms of cost and consequences, balance and loss, rather than terms of neat experimental design. The author draws the following principles for successful introduction of social innovation: maximum involvement, cooperation (interpenetration of personnel from other groups and agencies), egalitarian responsibility (each research team member had equal hand in formulating research issues), research as creative play, and role of research worker.

OPINIONS AND ATTITUDES IN CHANGE
FIELD STUDY/ANALYSIS

Tershakovec, A. An observation concerning changing attitudes toward mental illness. *American Journal of Psychiatry*, 1964, 121 (4), 353–357. (I, II; Disseminating information, Process of change)

The author studied judiciary procedures for psychiatric hospitalization to indicate changes in public attitudes toward mental illness. Between 1955 and 1960 the relative increase in voluntary admissions (rather than legal commitments) to metropolitan hospitals was about double the increase for rural institutions, although voluntary hospitalization occurred much more frequently in rural areas from 1935 to 1955. The author suggests that judicial commitment often reflects current attitudes of the public. The trend to more voluntary commitments reflects increased contact between the public and psychiatry although prejudices and fears remain concerning consultation with a psychiatrist due to the *information gap* between psychiatric workers and the public.

LINKAGE

SUGGESTIONS

Thomas, Edwin J. Selecting knowledge from behavioral science. In *Building social work knowledge: A report of a conference.* New York: National Association of Social Workers, 1964. Pp. 38–48. (III; Research selection criteria, Content relevance, Referent features)

Knowledge essential to practice is a growing, ever-changing body of provisional concepts, hypotheses and theories. Aimed at both the researcher and practitioner, this article provides a list of criteria for selecting potentially useful research topics and findings. Based on broad experience and observations of the author, the analysis includes development of selection criteria (content relevance and knowledge power), referent features (identifiable, accessible, manipulable, potent, ethically suitable). The author asserts that distinct types of applicability may be identified on the basis of criteria fulfillment. These include: material immediately applicable for direct action (meets all screening criteria); material immediately applicable for complementary action; material hypothetically applicable for direct action (fails noncritically on one or more of screening criteria); and material hypothetically applicable for indirect or complementary action. The author concludes with this statement: "Utilization of research findings is not a direct simple importation; rather it calls for detailed, thoughtful appraisal of relevance of the content, power of the knowledge, as well as many practical considerations relating to the knowledge referents."

BARRIERS TO INNOVATION

ANALYSIS

Thompson, Victor A. Bureaucracy and innovation. *Administrative Science Quarterly,* June 1965, 1–20. (II; Monocratic organization, Characteristics of innovative organizations)

A bold and cogent theoretical study derived from the author's observations and analysis, this paper considers the obstacles to innovation within the modern bureaucratic organization and makes some suggestions for changes that would facilitate innovation. Characteristics frequently found in the bureaucratic organization which serve as barriers to innovation are identified: often is monocratic (only one point or source of legitimacy); conflict is not legitimized and this depresses creativity; control over all resources is centralized; offers extrinsic rewards of money, power and status, rather than satisfaction from one's work; the reward structure places a high value on compliance and conformity; there is veto but no appeal (new ideas may be generated but vulnerable to veto). Attributes of the innovative organization are presented in terms of their general requirements (uncommitted resources, diversity of inputs, professional growth as perceived by individuals, power dispersed, creative climate) and structural requirements (will be relatively loose structurally, no "awesome" status differences, communications flow freely, integrative units are project-oriented). Implications for administrative practice are cited: resources fluid rather than overspecified; performance ratings by superiors probably have to be dropped; greater intra-organization mobility; and peer evaluation becomes increasingly important in recruitment and placement.

CHARACTERISTICS OF INNOVATIVE ORGANIZATIONS

THEORETICAL ANALYSIS

Thompson, Victor A. ***Bureaucracy and innovation.*** University, Ala.: University of Alabama Press, 1969. (II, IV; Organizational and institutional change, Barriers to innovation)

The book analyzes obstacles to innovation within the modern bureaucratic organization: monocratic nature of bureaucracy; high value placed on compliance; failure to legitimize conflict with resultant depressing of creativity; low value placed on satisfaction from work; low level of professionalization; high degree of departmentalization with consequent tendency to segregate innovative activity in research and development units; centralized control over resources. The author takes a strong position against the invasion of public administration by the "economlogicians"—that is, applied mathematicians. He proposes a series of indices by which the innovativeness of an organization can be assessed: professionalism, integrative-aggregative index, parochialism-cosmopolitanism index, obsolescence, purposiveness, programmedness, communication openness, job satisfaction. Currently, in his opinion, enormous increases in personal mobility encourage innovation; the high level of specialization in technology, conversely, serves as barrier to innovation.

COMMUNICATION/ COMMUNITY COOPERATION

DESCRIPTION

Townsend, M. Barre parents club: Consultation service. In H. R. Huessy (Ed.), *Mental health with limited resources.* New York: Grune & Stratton, 1966. (II; Consumer-initiated programs, Innovation adoption, Use of groups for change, Model for change)

This article describes a program, initiated by a group of consumers (a group of young women known as the Barre Parents Club), which has been described elsewhere as providing "an almost complete information network for their communities." The group had collected $700, which it planned to use as a revolving fund to help families faced with expensive health services. The money was never made use of; club members wanted to use it for children and the community, so voted to establish a Mental Health Consultation Program, assisted by matching funds from the State. A committee of women visited the community caretakers, clergy, police, school administrators, social workers, telling them psychiatric consultation would be provided twice a month. Sessions were 2 hours, with the first devoted to a lecture and group consultation, second to individual consultation. This "civic consultation" was "a demonstration of success in communication." (Success is ascribed to fact that club members were young, pretty, and enthusiastic; were acquainted with guidance clinic personnel, and the town has a strong feeling of identity and loyalty to its institutions.) During the "individual consultation" hour, only those directly involved with a problem received consultation, e.g., a clergyman, the school nurse and a city nurse conferring about a disturbed mother; or police officer, probation officer, and an alcoholic rehabilitation worker discussing a delinquent boy. The program was expanded to include a salaried social worker; demonstrations were given at meetings; League of Women Voters became interested as did other groups, and result was the Winooski Valley Family Consultation Service, providing joint consultation for two towns. This became a model for programs in other more rural communities.

COMMUNICATION

ANALYSIS

Triandis, Harry C. Some determinants of interpersonal communication. *Human Relations,* 1960, 13 (3), 279–287. (II; Communication effectiveness, Cognitive similarity)

This study tests the broad hypothesis that cognitive similarity leads to a greater communication effectiveness between two people. Cognitive similarity was measured by means of various indices utilizing data obtained from Osgood's semantic differential. Communication effectiveness was measured by the success of a person in matching the semantic differential of another person to the correct word. The data shows that the more similar the semantic profiles of a given concept, as judged by two people, the more likely it is that they will be able to communicate effectively about that concept.

ORGANIZATIONAL DEVELOPMENT

THEORETICAL ANALYSIS

Trist, E. L. On socio-technical systems. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 269–281. (IV; Process of change, Strategies for effecting change, Organizational climate for change)

This paper presents a frame of reference within which industrial enterprises may be studied empirically—whether as wholes or in parts. Two major concepts are employed: (1) an "open systems" model which takes cognizance of both internal and external environments; and (2) socio-technical system analysis which integrates the social human system with the technical activity system. The enterprise is in constant exchange with the external environment. This has an impact on inputs or imports (e.g., labor) and outputs or exports (e.g., products). Inputs and outputs, in turn, depend on the technical activity system. Relations with the environment may vary with: (a) changes in the environment that may be induced by the enterprise; (b) changes independently taking place in the environment; and (c) productive efforts of the enterprise in meeting environmental requirements. Implications of this for management, supervisory roles and the organization of work are discussed. Two alternate forms of work organization are detailed: (1) the conventional form with a formal structure and simple work roles and (2) the composite form with a simple formal structure and complex work roles. Two reminders to be derived from this paper are that major requirements in organization arise from the engineering and technical aspects of the enterprise and that the process of organizational growth arises from system dynamics.

MENTAL HOSPITAL INNOVATION

ANALYSIS

Tucker, H. D. et al. The impact of mental health films on in-patient psychotherapy. *Psychiatric Quarterly,* 1960, 34, 269–283. (II; Group participation, Group community, Group therapy, Use of groups for change)

A series of mental health films were shown to a group of mental health patients in a New York hospital. Discussions were held following each viewing and were recorded. Authors felt that these films were of great value in psychotherapy. The films seemed to increase group participation and cohesion; discussions were typically more fluent and animated than those without films. Sharing of experiences with each other and the therapists was increased, as was the desirable feeling of community within the group. Often certain topics and attitudes were discussed which had previously been avoided. The contents of the films also served as an educational tool by orienting "psychiatrically unsophisticated patients toward the interests and methods of dynamic psychotherapy much more rapidly than previous experience with such patients would have led the writers to expect." In general the authors believe that these films facilitate group (not individual) therapy and complement therapeutic procedures.

RESPONSE TO INNOVATION
ANALYSIS

Tyroler, H. A., Johnson, A. L., & Fulton, J. T. Patterns of preventive health behavior in populations: 1. Acceptance of oral poliomyelitis vaccine within families. *Journal of Health and Human Behavior,* 1965, 6 (3), 128–140. (II; Family health behavior)

Data from a 1960 survey in Dade County, Fla., is used to describe the response to oral poliomyelitis vaccine on the individual level, the family unit levels and the social class level. Of the original sample, the 111 families consisting of parents under the age of 40, "residing in the household with one preschool age child" were selected for further analysis. Results indicate a tendency toward similar behavior among all family members, with 82/111 of the families having everyone immunized or no one immunized. In the nonconcordant families the greatest statistical associations between immunization records are between those of the mother and those of the child. The authors conclude that "the associations within the families in this sample suggest maximal maternal influence." Analysis by social class shows a higher rate of immunization among the upper class with a maximal difference for fathers. Concordance is the typical family pattern with the lower-class families tending to have no one immunized whereas the upper class tends to have everyone immunized. Again, the mother seems to be the decision-maker since her behavior is highly correlated with that of the child. The authors conclude that mothers are the primary decision-makers in health affairs regardless of class.

PROMOTION OF UTILIZATION
ANALYSIS AND SUGGESTIONS

U.S. Department of Health, Education and Welfare. *Research utilization in aging: An exploration.* Washington, D.C.: The Department, 1963. (I; Barriers to utilization, Demonstration project)

This brief volume focuses on problems of research utilization as related to aging. Suggestions are made for maximizing the chances of getting research utilized. One should understand the frames of reference within which individuals perform their professional tasks; work through leading practitioners; consider motivations of the audience and their perceptions of the change agent's motivations; show people how new procedures can help them rather than criticize them for what they have been doing wrong; realize that people have greatest allegiance to activities in which they are direct participants; and repeat communications over and over (there are wide variations in response to messages, accepting, ignoring and rejecting). Barriers to research utilization reported are: practitioner's need for how-to-do-it guidelines; rigid departmentalization barriers holding up information of potential interest; reluctance of administrators to use research findings until they have personally tested their validity, and the fact that most social scientists hold questionable view that practical implications of research are not within their province. Getting research to work can be enhanced by using fundamental techniques similar to the agricultural extension method, and encouraging informed visits to researchers and demonstration projects. Building utilization into research projects is suggested through providing funds for adequate publication and dissemination of results.

COMMUNICATION
PROGRESS REPORT

Usdane, W. M. Problems and progress in the dissemination and utilization of vocational rehabilitation research findings by the practicing counselor. *Communication, Dissemination and Uti-*

lization of Rehabilitation Research Information. Washington, D.C.: Joint Liaison Committee of the Council of State Administrators of Vocational Rehabilitation and the Rehabilitation Counselor Educators, Department of Health, Education, and Welfare, 1967, Studies in Rehabilitation Counselor Training, No. 5. Pp. 1–18. (III, I; Research dissemination, Disseminating information, Utilizing information, Research-practitioner gap, Middleman role, Resistance to change)

One of the primary reasons for turning down grant applications was found to be the investigator's lack of familiarity with recent pertinent literature, one illustration of a need for the development of improved communication systems. Under government support the VRA plans to develop a monitoring system of such agencies as the National Aeronautics and Space Agency, Federal Aviation Agency, and the National Science Foundation; plans to establish a national information service in rehabilitation. The VRA has a wide and diverse audience within such fields as medicine, social welfare, economics, psychological and vocational counseling. In addition the Practicing Counselor is becoming harder to reach because of increasing duties. To shorten the time between research development and utilization the VRA hopes to establish a complete cycle of research and application to introduce new services into the community setting. To solve the problem of resistance to the researcher on the part of the practitioner, consultants in research implementation may have to be hired from among practitioners. Presently the VRA disseminates information through various publications of work in progress, final reports and releases, presentations at symposia, meetings, research conferences, in-service training conferences, and research seminars, and through selected demonstration and examples of specific projects related to utilization. Future plans of the VRA include: a research utilization task force, research briefs, revised guidelines for final reports, project research conferences, data banks and retrieval systems, distribution of currently approved projects, state-of-the-art monographs, projects on research utilization, mobile rehabilitation research utilization units, and information bulletins.

PROMOTION OF UTILIZATION
ANALYSIS

Van den Ban, Anne W. Utilization and publication of findings. In C. H. Backstrom & G. D. Hursh (Eds.), *Survey research methods in developing nations.* Chicago: Northwestern University Press, 1963. (I; Communication, Promotional communication, Researcher as persuader, Practitioner expectations)

Ways in which a researcher can stimulate utilization by practitioners and suggestions for publication of findings are offered in this article. It is pointed out that practitioners will only use research findings to solve problems in a new way if they realize they have a problem and if it is defined in such a way that it can be solved. Additionally there is a need for the practitioner to believe that research findings will help him to solve the problem, and to feel confidence in capability and motives of the researcher. Some other requirements are a willingness to experiment with new solutions to the problem, a social position enabling the practitioner to do so, and necessary money and resources to effect solution. Research becomes relevant to practitioners when they participate in the research process—utilization and application of findings require serious attention during the planning of the research project. Several general characteristics of the practitioner-researcher interface are described (practitioner expectations, practitioner ruts, researcher predictions of probable consequences, researcher as persuader), and analysis reveals that cooperation between researcher and practitioner is desirable in nearly every phase of the research process. Tensions can be reduced if the researcher is sensitive, does not stress educational or status differences and recognizes he is only a specialist in research and that practitioners may often know more about the field than he does. Research findings will not be utilized unless supported by personal communications with practitioners, and the author advocates the use of a middle-man to serve this communication function. Seminar and/or inservice training sessions are additional ways of enhancing the communication process. The author devotes considerable space to a specific discussion of writing style, presentation of figures and other visual aids; and outlines the differences among reports designed for other scientists and researchers, practitioners and the general public.

MENTAL HEALTH INNOVATION

CONFERENCE REPORTS/ SUGGESTIONS

Visotsky, H. M. Role of governmental agencies and hospitals in community-centered treatment of the mentally ill. *American Journal of Psychiatry,* 1966, 122 (9), 1007–1011. (IV; Organizational factors involving innovation, Organizational and institutional change, Disseminating information, Community cooperation)

Population growth and community expansion have put an end to the isolation of *State mental hospitals.* More communities are now getting involved in State hospital programs. Programs that were once ineffective can begin to function now that State hospitals are participants in a larger network of mental health services. The aim should be to supply inpatient treatment, outpatient treatment, partial hospitalization, rehabilitative services, return to the community, and other kinds of services, even though these efforts reach only a small proportion of people in need of help. Most help comes from a variety of community resources such as families, general physicians, and clergymen. In addition, there is help from the "caretakers" of the society—teachers, law enforcement authorities and welfare personnel. Psychiatric personnel can do their share by acting, in their own States, as consultants to their immediate community agencies, both public and private. Their approach could be similar to therapeutic approach used with patients: set the program with the patient and then back away and allow the patient to act. If governmental agencies are successful, then direct services will decrease and indirect commitment—consultation, planning, etc.—will increase. *Community mental health programs* must be made to fit the specific needs of a region rather than of an entire State. If a community knows its needs, there is no problem in informing the government agencies what these needs are. There are plenty of government agencies on the Federal, State and local levels that can help. No new agencies need be created. What is needed is that all these agencies learn more about one another so that they can work together. Their common goal should be to see to it that people who seek mental health services can get them.

MENTAL HOSPITAL INNOVATION

EMPIRICAL STUDY

Wade, A. D. Social agency participation in hospitalization for mental illness. *Social Service Review,* 1966, 49 (1), 27–43. (IV, II; Resistance to change, Strategies for overcoming resistance to change, Diffusion of knowledge, Educational diffusion, Organizational factors involving innovations)

Interviews conducted during 1961 with more than 75 social agency executives, supervisors, and caseworkers in seven representative States revealed major factors that deter *social workers* from *participating in the hospitalization of the mentally ill.* Most frequently noted were (1) fear of liability from civil suit, (2) uncertainty about authority to hospitalize, (3) questioning of professional competence to define the specific mental health problem, and (4) possible damage to the agency's reputation. Generally the agency with the highest degree of refinement in individualized service was found to avoid the commitment process, whereas those of lower professional status were more likely to participate in it. The barriers can be overcome by (1) informing social workers about commitment procedures and laws, (2) the agency's assuming the burden of defense in case of civil liability actions, and (3) initiating a new type of *agency to coordinate all community services for the mentally ill.*

ORGANIZATIONAL CHANGE
CASE STUDY ANALYSIS

Walker, R. A., & Kiel, O. F. *An accountability system for a manpower program.* Minneapolis, Minn.: Minneapolis Rehabilitation Center, 1970. (IV; Strategies for effecting change)

After attempts failed to increase client benefits by the development of various control mechanisms, the management of a rehabilitation center set up a system for accountability. First, management made a statement of the specifications of an optimal outcome system. Next, a statement was made of the objectives from which measurement of the benefits would be derived. Points of control were set up as input, process, and output; and a statement of maximum performance was made. Finally, agency expectations for client benefits four weeks after discharge were defined, thus setting a system of values from which performance could be judged and rewarded. After 12 weeks this system of accountability resulted in a dramatic improvement in the center's program.

USE OF GROUPS FOR CHANGE
DESCRIPTION

Wallach, M. A., & Kogan, N. The roles of information, discussion and consensus in group risk taking. *Journal of Experimental Social Psychology,* 1965, 1 (1), 1–19. (II, IV; Strategies for overcoming resistance to change, Resistance to change, Organizational climate for change, Opinions and attitudes concerning change)

If members of a group engage in a discussion and reach a consensus regarding the degree of risk to accept in the decisions they make, their conclusion is to pursue a course of action more risky than that represented by the average of the prior decisions of each individual considered separately. The three elements investigated that might bring about this phenomenon were: (1) provision of information about the risk-taking levels favored by peers, (2) group discussion, and (3) achievement of consensus. Discussion with or without consensus produced shifts toward an averaging effect. Thus, the occurrence of group discussion is both necessary and sufficient for generating the risky shift effect.

STRATEGIES FOR EFFECTING CHANGE
THEORETICAL ANALYSIS

Walton, Richard. Two strategies of social change and their dilemmas. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 167–176. (IV; Change agents, Models for change, Institutional change, Process of change)

There are two systems of ideas about social change that often present a dilemma to the practitioner. First is the tactic of power strategy which has as its objective obtaining import concessions; second is the tactic of attitude change strategy which aims to reduce intergroup hostility. There are several contradictions between the two: overstatement of objectives which may benefit the power strategy versus deemphasizing differences (attitude change strategy); stereotyping which promotes internal cohesion versus accurate differentiation of peoples; emphasis on power to coerce versus trust; information for ambiguity versus predictability; threat versus conciliation; impact versus catharsis in the management of hostility; and coalition versus inclusion of third parties. Two solutions to the dilemma are posed. One is to use the two strategies in sequence as in the freeze-thaw tactics in international relations. The other is to have the contradictory strategies implemented by different persons or subgroups. The dilemma can be minimized further by selecting tactics from each of the strategies that reinforce rather than detract from the alternate strategy. Recognition of these dilemmas is the first step toward developing a theory of social action which specifies the conditions under which one should conform to the tactical requirements of one strategy versus the other.

EDUCATIONAL INNOVATION

READINGS

Watson, Goodwin (Ed.) *Change in school systems.* Washington, D.C.: Cooperative Project for Educational Development by National Training Laboratories, National Educational Association, 1967. (II, IV; Change agent, Organizational climate for change, Organizational factors involving innovation, Strategies for effecting change)

This book, produced for the Cooperative Project for Educational Development (COPED), is a companion volume to *Concepts for Social Change.* It deals with the structure and processes of the school system and presents various strategies for change which would test and develop the concepts presented in *Concepts for Social Change.* The school system is a social system which needs to be analyzed and mapped to find not only where it is going but where it has been. In planning change in the process of socialization, there is a need to know what are the components, goals, and technology which should be operative. Crucial to organizational development are a workable model and interaction between the various parts of the system. Change within the school system may be aided by a relationship with a university and the development of a trainer change agent. The final paper presents a "conceptual architecture of a self-renewing school system" which includes the elements of sensing, screening, diagnosing, inventing, deciding, evaluating and revising.

RESISTANCE TO CHANGE

ANALYSIS/RECOMMENDATIONS

Watson, Goodwin. Resistance to change. In *Concepts for social change.* Washington, D.C.: Cooperative Project for Educational Development by National Training Laboratories, National Educational Association, 1967. Pp. 10–25. (IV, I; Characteristics of resisters)

The author outlines the life-cycle of resistance to an innovation and discusses psychological factors of individuals and groups which affect resistance. The life-cycle of change-resistance is: (1) undifferentiated resistance, (2) differentiated resistance, (3) mobilized resistance—the stage critical to success or failure, (4) success sufficient that only conspicuous error can mobilize the resistance again, and (5) one-time advocates of change are now resisters of emerging change. Resistance in individuals may be due to homeostasis, habit, primacy (first successful way of dealing with a problem), selective perception and retention, dependence (incorporation of parental beliefs), illusion of impotence, super-ego (which serves tradition), self-distrust, and insecurity and regression (strongest when change would be most useful).

Social systems resist change by conformity to norms, systemic and cultural coherence, vested interests, sacrosanct values, and rejection of "outsiders." Thirteen recommendations about dealing with resistance to change are given, grouped into three categories: "(1) Who brings the change? (2) What kind of change succeeds? (3) How is it best done?"

EDUCATIONAL INNOVATION
CASE STUDY/ANALYSIS

Watson, Goodwin. Utopia and rebellion: The new college experiment. In M. B. Miles (Ed.), *Innovation in education.* New York: Bureau of Publications, Teachers College, Columbia University, 1964. Pp. 97–116. (II; Utopian communities, Characteristics of utopian communities, Climate for change)

Drawing from the experiences of New College, established in 1932 at Teachers College, Columbia University, the author undertakes to identify the attributes of communities which are designed to incorporate an ideal state of affairs—that is, a utopian community. (New College existed for 7 years and enrolled approximately 300 students.) Utopian aspects included individual guidance, no uniform credit ladder, emphasis on individual projects rather than lectures, extended contact with children, and close student-faculty relationships. The experiment was periodically embattled, abruptly terminated and, despite strong student-faculty efforts, was not revived. New College suggests a number of utopian characteristics: (1) discrepancy between what people profess and what they actually do provides the initial impetus (utopian community puts into practice ideas which have been around for a long time); (2) utopias spring up in clusters during certain historic periods; (3) most utopias center about a strong, benevolent father figure; (4) founders of utopias usually seek a place where they would be free of expectations and pressures to conform to the norms of an established culture; (5) utopias tend to attract people who want to read, meditate, and discuss ideas (often these people are inept at handling practical, everyday tasks); (6) utopias are generated in a spirit of ferment which often pervades and splinters the new community; (7) most utopias are beset by financial worries; (8) the larger external community tends to view the experiment with ridicule and sometimes with hostility; (9) members of a utopian community tend to minimize the dangers of external hostility. The generalizations about utopian communities have implications with respect to a climate receptive to innovation.

PLANNING FOR CHANGE
ANALYSIS

Watson, G., & Glaser, E. M. What we have learned about planning for change. *Management Review,* 1965, 54 (11), 34–46. (IV; Barriers to change, Resistance to change, Change climate)

The planning of change should, where feasible, be shared by those who will be most affected by it. Within an organization there are conflicting pressures for both stability and change. Drawing upon their experience, relevant literature and a research study they conducted of "Utilization of Applicable Research and Demonstration Results," the authors spell out possible steps management can take to facilitate a change within an organization. Pressure for prompt action before the necessary planning is completed, and staff defensiveness during the factfinding and planning stages are two of the possible barriers to an orderly change. After diagnosis of the problems facing an organization, next needs are: to generate proposals for solving problems (inviting suggestions from members of the organization, as well as obtaining knowledge of what others have done to cope with such problems); to state clearly the objectives to be achieved; and to schedule the best possible use of resources of people, money and sometimes equipment in the planning effort. The benefits of the change need to be made clear. A need for a favorable, open-mindedly receptive organizational climate is stressed and concrete suggestions are offered, if adverse conditions exist, for a type of "climate training" to precede the introduction change. Frequently (but not always) when faced with resistance to change, an effective course of action is to focus on reducing resistance rather than overwhelming it. Thoughtful consideration of who might be affected by a given change, and how, is suggested so as to prevent negative side effects from appearing in areas that are not directly connected with the department or portion of the total system where changes are being introduced. Included is recognition of the need for a procedure of periodic review and revision, and that a breathing spell to consolidate gains made by the organization before launching other innovations may be desirable.

BARRIERS TO COMMUNICATION
EXPERIMENTAL STUDY

Weaver, Carl H. Measuring point of view as a barrier to communication. *Journal of Communication*, Spring 1957, 7, 5–13. (IV; Opinions and attitudes in change)

The semantic barriers to communication between labor and management, which result from each group's interior norms and "definitions" of phrases, must be broken down to permit the groups to understand each other. The author constructed a test of the semantic values of various concepts central to labor-management discussions. The construction of the actual test used and the procedures for its administration are discussed, as are detailed statistical analyses. The author concludes that the labor groups tested showed more polarity and more stereotypes with respect to these concepts, and that they probably contribute more to communication barriers in labor-management discussions. He also concludes that the semantic barrier between management and labor is sufficiently great that "management cannot tell its story better merely by using another medium of communication."

PROMOTION OF UTILIZATION
EXHORTATION

Weaver, Warren. Basic research and the common good. *Saturday Review*, Aug. 9, 1969, 17–18 & 54. (I; Selecting knowledge, Utilizing knowledge)

Moral questions which may be clear and should be considered by the scientist in mission-directed research, may be unclear and baffling in basic research. This should not lead to a devaluation of basic research. Many social benefits as well as the increased understanding of our world have come from discoveries of basic research. Programs of research set up to attack one specific problem often are not as effective as more broadly based approaches which capture interests, curiosities, and enthusiasms of scientists and attack basic problems.

ORGANIZATIONAL CLIMATE FOR CHANGE
REVIEW

Webber, Ross A. The roots of organizational stress. *Personnel*, 1966, 43 (5), 32–39. (IV, II; Organizational factors involving innovation, Characteristics of innovative organizations, Characteristics of organization leadership, Communication within organizations)

In minimizing the adverse impact of stress on organizational effectiveness, managers often face a challenge to their sensitivity and ingenuity. They must modify the organizational structure to prevent one-directional, unpredictable, or inadequate patterns of interaction wherever possible. In their personal behavior, managers must anticipate and absorb stress when it occurs. A crucial aspect of any manager's job is the intentional creation of stress as a dynamic, motivating force in the organization. But this stress should be calculated and controlled. When the press of technological and personnel problems becomes great, the tempo of contacts becomes so rapid, and the number of interactions so frequent, that people fail to converse long enough to reason through and solve problems. Regularities of actions and interactions disappear when stress occurs; erratic variation takes over. Stress itself involves disturbance of stable patterns of work and interaction. Research has shown that the effective manager: (1) keeps lines of communication working in many directions, (2) spends more time responding to subordinates and associates, (3) is more available and is contacted more. The organization must be constructed so that the kinds of situations that disturb people emotionally are rare. Three interaction patterns known to cause stress are: (1) the one-directional pattern of receiving and/or responding to communication with no opportunity to initiate anything, (2) unpredictability, which can result from changes in personnel, routines and environmental conditions, and (3) inadequate interaction in which the total interactional flow between individuals is fragmented and infrequent.

DISSEMINATING INFORMATION
EXPERIMENTAL STUDY

Welch, J. M., & Verner, C. A study of two methods for the diffusion of knowledge. *Adult Education,* 1962, 12, 231–237. (III, II; Educational dissemination, Use of groups for change, Utilizing information, Change agent)

This study examined two different ways of disseminating information, the *adult education method* and the *mass communication method.* When both methods were tested with individuals belonging to the same occupational group, the adult education method was significantly better than the mass communication method. The adult education method used a clinic approach and attendance was voluntary. Supplementing it with the communication method had no significant effect on results. Main differences between the two approaches seemed to be the role of the change agent, the task of the learner, and motivation, all present in the educational disseminating process. On a third control sample (who had not received either adult education or mass communication) there were no significant effects from indirect influences, probably because the occupation group under study had little or no group identity and few interrelationships.

OPINIONS AND ATTITUDES CONCERNING CHANGE
EXPERIMENTAL STUDY

Whittaker, J. O. Attitude change and communication: Attitude discrepancy. *Journal of Social Psychology,* 1965, 65, 141–147. (II; Process of change, Resistance to change, Promotional diffusion)

A curvilinear relationship exists between communication-attitude discrepancy and attitude change, with small discrepancies between the subject's opinion and the position of the communication resulting in minimal changes, with moderate discrepancies resulting in the greatest change, and with very large discrepancies resulting in small positive or small to large negative changes. One hundred nine college students constituted the subjects in an experiment utilizing a before-after design. Two opinion questionnaires were administered 1 month apart, the second questionnaire embodying the communication, the opinion of a majority group on a particular topic. This opinion on each item was varied according to the subject's initial position on the issue. Results confirm the hypothesis that communications presenting stands relatively close to the subject's position result in less change than do those further removed. In terms of relative shift (the amount of shift proportionate to the actual discrepancy), however, smaller discrepancies always yield greater change than do larger ones.

STRATEGIES FOR CHANGE

HISTORICAL

Wiles, Kimball. Contrasts in strategies of change. In R. R. Leeper (Ed.), *Strategy for curriculum change.* Washington, D.C.: Association for the Supervision of Curriculum Development, 1965. Pp. 1–10. (IV; Educational change, Directed change, Directed change strategies, Change process)

Based on the broad experience and observations of the author, this article compares the assumptions underlying directed change efforts in education prior to 1957 with the underlying directed change efforts after 1957. The differences between the two periods are in part reflections of increased mass media, exposure of the general public to more ideas which in turn stimulates promotion of change in schools, and the increased efforts of the federal government to promote change. Strategies for directed change prior to 1957 were based on the various assumptions which influenced curriculum change programs in the late 1950's and early 1960's, such as: changes in entire system can be effected by adoption of a new master plan drawn up by outside experts; change in curriculum is effected most efficiently at local school building level, and occurs as people change through their participation in decision-making related to curriculum; change in curriculum is produced through in-service education which develops new teacher perceptions and skills; change in curriculum is effected by supplying teacher with consultants to assist in innovation; providing in-service education for the principal which produces a change in his work style; workshop opportunities for key teachers in a building who then become leaders for other teachers on the staff. After 1957 the basic attitude underlying the new assumptions is that change should not be equated with chance but with development; and innovation should be equated to long-term goals, that the process of change contains three steps—innovation, diffusion, and integration.

PROCESS OF CHANGE

THEORETICAL ANALYSIS

Williams, T. R. The study of change as a concept in cultural anthropology. *Theory into Practice,* 1966, 5 (1), 13–19. (II; Processes of innovation, Planning for change, Resistance to change, Strategies for effecting change, Educational innovation)

Change is a universal attribute of culture. Persistence—resistance to change—is also universal, but is of lesser consideration since very little is completely immutable in societies. The author relates the anthropological concepts of change and persistence to change in public education. Aspects of human biology are used to study the relationship between change and persistence. Man's reflexive capacity (anticipatory ability) enables him to consider alternative responses to present and future situations. Also, mechanisms for defense of the ego influence the functioning of the reflexive capacity. Relating anthropological theory to American education, the author points out that there are contradictory values of innovation and conservation operating at the same time. Complex changes in knowledge are not being incorporated in present-day education. For example, our children will have vast amounts of leisure time but they are not being prepared for how they will occupy this time because of our inherited belief in the dignity of labor and hard work, and fear of facing up to a future different from our present lives. The author suggests that since we are able to predict what will be occurring several decades from now, efforts should be made to (1) overcome educators' fear of change and (2) refocus the education process away from the past and to the future. Knowledge of cultural dynamics can aid in effecting change in public education.

ORGANIZATIONAL CHANGE
THEORETICAL ANALYSIS

Willower, Donald J. Barriers to change in educational organizations. *Theory into Practice,* 1963, 2 (5), 257–263. (IV; Resistance to change, Organizational barriers to change, Organizational climate for change)

Focusing on the organization rather than the individual, the author discusses some *intra- and extra-organizational* barriers to change in education, their sources and forms. Resistance to change develops: from the real or perceived threat that it poses to status; if it promises benefits to one part of the organization at the expense of another; when it is imposed from above (particularly in egalitarian society); and when errors are made in introducing the change. Extra-organizational resistance may be found in an educational setting when community and/or board resist the expense of a planned change. Resistance to change may take the form of verbal hostility, sloppy implementation or apathetic indifference, rigid conformity, and overt intra-organizational conflict strategies (e.g., teachers' development of a communication system to warn of an administrator's surveillance). It is suggested that an administrator should seek to establish an open-minded organizational climate. His long-range objective should be to provide mechanisms for innovation as an integral part of organizational life.

UTILIZATION
CASE STUDY

Wilson, Elmo C. The application of social research findings. In *Case studies in bringing behavioral science into use. Studies in the utilization of behavioral science,* Vol. 1, Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 47–58. (I; Promotion of utilization, Researcher follow-up, Research utilization)

To explore the extent to which the social science research can exert an influence over utilization is the author's purpose in this article. A management study carried out for a small, denominational college included a followup component in the original research contract. This idea called for the research staff, 1 year after submission of the report, to find out what progress had been made in applying the findings of the study. The followup generated these findings: of more than 160 specific recommendations, three-fifths had been, or were being, carried out; in a few instances, the research staff concluded that the original recommendations had not been justified. Of the recommendations not being implemented, reasons could be characterized as follows: human relations reasons (inertia, personal preferences, etc.); decisions in which the college administration decided to discard the recommendations; and situations in which the recommendations were not as appropriate as they originally had been because of subsequent developments in the client situation. The research staff concluded that utilization might have been greater if certain weaknesses in the report had been corrected (recommendations summarized at beginning of report rather than at the end, inclusion of fewer minor problems, and an estimate of comparative costs of various recommendations and variable time periods in which it would be desirable to bring them about). The research staff was convinced that the knowledge by the client that a followup survey was to be made served as an incentive toward utilization of recommendations.

UTILIZATION
CASE STUDY

Wilson, M. L. The communication and utilization of the results of agricultural research by American farmers: A case history, 1900–1950. In *Case Studies in bringing behavioral science into use. Studies in the utilization of behavioral science,* Vol. 1. Stanford, Calif.: Institute for Communication Research, Stanford University, 1961. Pp. 75–111. (I, III; Research utilization by farmers, Innovators, Adopters, Informal leaders, Non-adopters)

This paper is an account of how the utilization of scientific research has impressively affected the progress of agriculture between 1900 and 1950. Its presentation is based on the assumption that the examples presented will give insight into the general problem of utilizing behavioral science. The author outlines the methods used in enabling farmers to put into practice findings obtained in agricultural research. Making research results easily available was not enough. Required also were changes in farmers' viewpoints and behavior. Institutions and channels of communication were developed between farmers and agricultural researchers. Agricultural branches of land-grant colleges through academic involvement of the farmer, experiment and research, provided the farmer with opportunity to see successful solutions to serious agricultural problems, increasing his interest in other new ideas. Extension work (Smith Lever Act in 1914), providing that each State initiate extension services through the land-grant college, was a large step forward. Extension staffs at the campuses sent specialists to county agent meetings with new research ideas, returning to the campuses with current farm problems. Three stages were found to exist in the process of acceptance: awareness, interest, and evaluation (leading to trial and ultimate adoption or rejection of the ideas). Personal and social factors affecting adoption of ideas were found to be: personal prestige, family behavior, educational development, group and community behavior. Farmers, as users of research, tend to fall into four classes: innovators, early adopters, informal leaders, and nonadopters.

STRATEGIES FOR EFFECTING CHANGE
CASE STUDY ANALYSIS

Winn, Alexander. Social change in industry: From insight to implementation. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change.* (2d ed.) New York: Holt, Rinehart & Winston, 1969. Pp. 317–327. (IV; Organizational change, Organizational climate, Change agent, Resistance to change, Use of groups for change)

It has been predicted that bureaucracy will decline and a new type of organization, an *organic-adaptive* system will replace it. Effective participation in this type of organization will require change toward a high tolerance for ambiguity. The role of administrator may acquire the tasks of the change agent. Early methods for effecting this change were the case method and role playing. Business experiences were simulated in classes, and through discussion and confrontation of ideas the participants became aware of their generalizations regarding human behavior and reexamined their own attitudes and assumptions. The desired result, more effective and responsible organization members, was not obtained. T-Groups emerged which did not just simulate experiences, but promoted immediate existential confrontation. The original basic T-Group consisted of people who were not functionally related. Newly acquired insights carried over to the families of participants, but not to the organization. Two new types of T-Groups evolved consisting of functionally related people—the "family" laboratory and the "interface" laboratory. The latter has the greatest result in organizational effectiveness. Despite resistance and the necessity of creating acceptance, there is evidence that the value system, norms, beliefs and expectations of the organization are changing. There is freer communication, less authoritarianism, more participation in decision-making and attention to the human side of the enterprise.

TECHNOLOGICAL INNOVATION
SYNTHESIS

Witney, Vincent H. Resistance to innovation: The case of atomic power. *American Journal of Sociology,* November 1959, 56, 247–254. (I; Diffusion of innovation, Planning for change)

Peacetime uses of nuclear energy will develop slowly. Atomic power, a major technological innovation, will meet with resistance flavored by local conditions. "The use of an invention may be expressed . . . as a function of the combined factors of demand minus resistance." Psychological, cultural, economic (including timing), and political factors influence diffusion. Innovation disturbs the dynamic equilibrium of a group and advantages may be outweighed by losses resulting from disturbing the equilibrium. Important technological innovations take 35 to 50 years to reach maturity. Cross-cultural diffusion is hindered primarily by political barriers to communication. Anthropological considerations such as the general "aggressive" or "submissive" nature of a culture will influence the spread of low cost atomic power to undeveloped areas. Economic factors will probably prevent wide use of atomic power in the United States.

MENTAL RETARDATION RESEARCH
EMPIRICAL STUDY/SURVEY

Wolfensberger, W. Administrative obstacles to behavioral research as perceived by administrators and research psychologists. *Mental Retardation,* 1965, 3 (6), 7–12. (IV, I, III; Mental health innovation, Research-practitioner gap)

An empirical study of conflicting claims about the usefulness of mental retardation institutions as research settings was made by mail questionnaires sent to two groups: mental health researchers and institutions' superintendents. Researchers often had had to give up research ideas due to logistics difficulties, and others had had to modify experiment designs to eliminate the use of aversive stimuli (electric shock, etc.) which were felt to be inhumane. Most felt that they would be able to get control of an experimental ward to study a patient's total environment. The informed cooperation of ward attendants as well as administrators was considered essential to success. Superintendents reported no recent research in 61 percent of their institutions. All requests to establish long-range psychological labs had been granted, although most administrators had not actively encouraged research by outsiders. Guaranteeing the availability of subjects at odd hours and permitting the use of aversive stimuli were administrators' chief problems, although more help was promised than researchers expected. The author points out the need for studies using aversive stimuli, since retardates do experience many aversive stimuli and since there is no way of predicting the value of such studies until many have been conducted and assessed. Geographic isolation of many institutions hampers chances for university affiliation and causes staffing problems. Most superintendents handle research requests without a definite conceptual framework, and too many seem to be "for research" but are unwilling to work out facilitating conditions.

RESEARCH-PRACTITIONER RELATIONSHIP
THEORETICAL ANALYSIS

Wolfensberger, Wolf. Dilemmas of research in human management agencies. *Rehabilitation Lit-*

erature, June 1969, 163–169. (I, III; Adaptation of innovation, Strategies for overcoming resistance to change, Research diffusion, Utilizing knowledge)

Important items agency administrators should consider in making decisions about supporting and using research within their agencies are discussed. Administrators must be prepared to accept, and to use constructively, tension induced in the agency by the prospect of change. The administrator must be aware of his own attitudes and prejudices toward research in general and topics of investigation in particular; characteristics of the agency and of the researcher must also be considered. It is suggested that an agency acquire, through internal research, a realistic idea of how much time, money, manpower and physical facilities are required for research before seeking external support. The applicability of the research to agency operations may be determined by agency size and organizational structure; top management must be prepared to dismiss, displace, or demote members of middle management who cannot carry out new research-related policies. In deciding what kind of research to support, and how, the following considerations are important: the administrator must look at both visible problems and their underlying causes. Also, while various roles may be open to the researcher, the focus of the research itself should follow the model that prevails in the agency. Finally, the administrator must decide whether research will be basic or applied. Basic research tends to isolate agency personnel from the research unit. Applied research, with its implications of change, may induce defensiveness. Therefore, in order to ensure maximum benefits of applied research, the research operations must be defined as prestigious, and the research team given equal status with the person who heads the operations to which the research applies. Also, there should be two-way face-to-face communication between researchers and those who will be affected by it. The author proposes that innovative ideas be rewarded, whether they are actually accepted or not. Finally, it is suggested that in the physical sciences, research almost invariably precedes change; however, in the social sciences decisions are made which are inconsistent with current research findings. Therefore, efforts must be made to control social changes, rather than having them control us.

EDUCATIONAL INNOVATION
MONOGRAPH

Woods, Thomas E. *The administration of educational innovation.* Eugene, Oreg.: Bureau of Educational Research, School of Education, University of Oregon, May 1967. (II, I; Strategy for effecting change, Process of innovation, Barriers to change, Process of change)

Stability and change are significant problems for educational administrators as well as for administrators of all other social institutions. In this monograph on change and educational administration, the author attempts to bridge the gap between knowledge acquired through the behavioral sciences about change processes and the understandings needed by school superintendents in order realistically to manage change programs. It is based upon the assumption that the school administrator must have some knowledge of the various phenomena associated with change and the consequences that have been perceived to emerge from the different change strategies that may be employed. It is an effort by a superintendent of schools to review sophisticated behavioral science research and to discover its relevance for the practicing superintendent of schools.

PUBLIC MENTAL HEALTH CARE
RECOMMENDATIONS/ANALYSIS

World Health Organization. *The role of public health officers and general practitioners in mental health care.* Washington, D.C.: World Health Organization Technical Reports Series, No. 235, 1962. (III; Research diffusion, Community cooperation)

Public health officers (PHO's) and general practitioners (GP's), as practitioners of public and private medicine, must be familiar with the concepts of mental health to insure complete care of those who need it. Either formal or informal training can be used, but the approach should be tailored to each profession's needs, and both should be taught to relate to mental health practice. Specific subject areas of relevance to each profession are discussed. PHO's must learn to assess the information from one GP against that received from others, and they must relate this to community health services and help plan community health services and health service policies. Community mental health services should be established by PHO's and psychiatrists working together. The role of PHO's, GP's and psychiatrists in developing countries may not be differentiated, and one person may have to perform all three functions. "In those developing countries where communication and cooperation between all types of medical and health workers have traditionally been integrated, the question arises of how to preserve, or even improve this state of affairs when other methods, technologies, and specializations are introduced." GP's and PHO's should also work closely with community agencies such as schools where mental cases can be easily identified and information about mental health can be spread.

PROMOTION OF UTILIZATION
ANALYSIS

Wright, Philip. Technology transfer and utilization: Active promotion or passive dissemination? *Research/Development*, September 1966, 9, 34–37. (I; Disseminating information, Adoption of innovation, Response to innovation)

The author reports a two-phase program at the Office of Industrial Applications (OIA) at the University of Maryland which seeks to study the transfer of technical knowledge to industry from the National Aeronautics and Space Administration. OIA examines the factors that impede and those that facilitate such transfers. The first phase of the program is characterized by active promotion of the merit of a selected portion of the NASA technology as a source for new products and processes helpful to industry. The second phase (as yet incomplete) has been an effort to trace the outcome of self-generated organizational interest in the technology as a result of publicity in trade journals, NASA's own *Tech Brief* dissemination program, and elsewhere. Findings indicate that a critical point in the transfer and utilization mechanism is frequently the personal confrontation of the intended user with the innovator. Such confrontation, if skillfully managed and responsibly contributed by all parties, generates within the user the degree of enthusiasm which is psychologically necessary for embarking on a new endeavor. Major reasons for rejection and inaction were technical, and associated with indeterminate applicability and uncertain market potential. In summary, almost eight times as much interest was motivated by the possibility of improving an existing product or process as was motivated by the chance of acquiring a completely new addition to the inquirers' processes and products.

ADOPTION OF INNOVATION
PILOT STUDY

Yeracaris, Constantine A. Social factors associated with the acceptance of medical innovations: A pilot study. *Journal of Health and Human Behavior*, 1962, 3 (3), 193–197. (III, I; Planning for change, Characteristics of adopters of innovation)

Two hypotheses guided research on acceptance of tuberculin skin tests by parents of lower and middle class high school students. (1) People in different social positions will have different values and ultimately different actions. (2) The acceptance rate for medical innovations will vary with their similarity to cultural characteristics. Sixty-two percent (vs. 59 percent) of the lower-class parents signed permission slips for tuberculin skin tests. Within each school, religion and education were related to acceptance; Jewish, Protestant, Catholic, and "other" respondents accepted the skin test, in that order. Age, homeownership, occupation, and nativity were unrelated. Vaccination against polio and the favoring of preventive chest X-rays seemed to make parents and children more accepting of the tuberculin test. The author concludes that "health programs must be planned . . . to appeal to different social and cultural segments of our society."

MENTAL HEALTH INNOVATION

CONFERENCE REPORT

Yolles, Stanley E. The role of the psychologist in comprehensive community mental health centers: The National Institute of Mental Health view. *American Psychologist*, 1966, 21 (1), 37–41. (I, III; Community cooperation, Change agent, Organizational change)

The former Director of the National Institute of Mental Health, defines the *community mental health center program* as an entirely new approach to the care, treatment, and prevention of mental illness. The program is an integrated network of treatment services based in the community where people live and work, where they can get proper care when they become ill, and where they can be helped to lead productive lives. A major contribution of psychology has been the theory of social competence—in what ways can intervention help people become competent within their society (wider environment of community) to withstand its stress and to realize their fullest potential. Yolles suggests that the role of the psychologist in the community mental health center can (1) stimulate the creative practice of psychology as a tool for the prevention of mental illness and the promotion of mental health; (2) function as part of a mental health team; and that (3) center leadership is based upon individual competence, and not upon membership in a particular discipline. The success of the new community mental health centers programs rests ultimately upon the skill and creativity of each mental health profession as it takes its place in service to the community's mental health.

USE OF GROUPS FOR CHANGE

REVIEW

Zagona, S. V., Willis, J. E., & MacKinnon, W. J. Group effectiveness in creative problem-solving tasks: An examination of relevant variables. *Journal of Psychology*, 1966, 62, 111–137. (II, IV; Process of change, Organizational change)

Although the term creativity carries a variety of meanings, an extensive review of experiments in the group creative problem-solving process discloses five basic variables that have been studied: (1) task variables, (2) individual versus group comparison, (3) the role of leadership, (4) the influence of training, and (5) how group characteristics such as structure and function relate to its creative expression.

ORGANIZATIONAL CHANGE

DESCRIPTION

Zand, D. E., Miles, M. B., & Lytle, W. O., Jr. Organizational improvement through use of a temporary problem-solving system. In D. E. Zand & P. C. Buchanan (Eds.), *Organizational development: Theory into practice*, 1964. (IV; Problem-solving process, Change agents, Interpersonal behavior, Organizational behavior)

The management of the service unit of a large company wished to improve its effectiveness and efficiency. Change agents were engaged and two three-day intensive sessions were planned, one for upper and middle management and the other for foremen. Each session was built around a program of "deliberate, carefully paced movement through the stages of the problem solving process". In addition, there were theory sessions and role-playing exercises on aspects of interpersonal behavior and organizational behavior. The program balanced training in problem-solving and interpersonal relations; laboratory situations, however, tend to overstress the latter training. The apparent success of the sessions reflected in problems solved and in active task forces for solving new problems may result from several factors related to the condition of the organization. The organization was in an arousal state; its managers saw the need for improvement and were willing to try new approaches. The method of approach also increased the effectiveness. The "low threat confrontation" resulting from the initial separation of superiors and subordinates and the use of controlled conflict to prepare for confrontation were vital. The temporary system focused change on the system rather than on the individual. Anxiety was reduced by separating managers and foremen initially and bringing them together only gradually. The problem-solving approach of the temporary system was re-engaged into the permanent system with minimal difficulty; task forces set up within the temporary system were continued. As upper management responded favorably, the system became more open and self-directive.

RESISTANCE TO CHANGE
ANALYSIS AND SUGGESTIONS

Zander, Alvin. Resistance to change: Its analysis and prevention. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The planning of change: Readings in the applied behavioral sciences.* New York: Holt, Rinehart & Winston, 1962. Pp. 543–548. (IV; Reducing resistance to change, Planning for change)

One common denominator in examples of resistance to change (which might serve as a defense of such resistance to change) reveals behaviors intended to protect individuals from the effects of real or imagined change. Zander defines resistance to change in industrial organizations, identifies the conditions that appear to be associated with development of this resistance, and examines ways whereby resistance may be prevented or diminished. Based on the author's own knowledge, the report indicates some conditions conducive to resistance occur when: the nature of the change is not made clear to the people who are going to be influenced by it; those influenced are caught between strong forces pushing them to make a change, and strong forces deterring them from making the change; a change is made on personal grounds rather than impersonal requirements or sanctions; a change ignores already established institutions in the group. Resistance will be prevented to the degree that the changer helps the "changee" develop an understanding of the need for the change, an explicit awareness of how he feels about it, and what can be done about these feelings. Resistance will be less likely to occur if the group participates in making the decisions about how the change should be implemented, what the change should be like, and how the people might perform in the changed situation. Resistance will be less likely to develop if the facts which point to the need for change are gathered by the persons who must make the change.

MIDDLEMAN ROLE
ANALYSIS/SUGGESTIONS

Zetterberg, Hans L. *Social theory and social practice.* New York: Bedminister Press, 1962. (I, III; Utilizing information, Promotion of utilization, Change agents)

The author outlines a diagnostic program to use in order to apply seasoned sociological knowledge to social problems in an economic way. He presents some of what he sees as the key sociological laws in a fairly accessible form, and suggests that the diagnosis and prescription process should proceed as follows: (1) Make an exploratory inquiry, perhaps by informal survey, into the client's problem. (2) Compare informal results to available theoretical tools, and translate the problem into theoretical terms as completely as possible. (3) Present this to the client. (4) Calculate possible solutions. (5) Translate theoretical solutions into practical ones, and inform the client of "side effects" which may follow. Interesting research problems may come to light during consultation, but this is no excuse for making a client support an entire research staff to study problems already solved.

★ U.S. GOVERNMENT PRINTING OFFICE: 1972-429-413/609